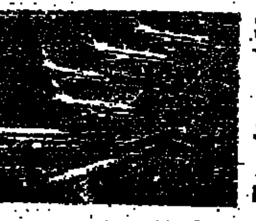

Stormy weather

Why US airlines are singing the blues

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Good intentions on ice

Why refrigerators still use CFCs

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Want to see my snaps?

How work suffers after vacation

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Aerospace survey

Coming to terms with excess capacity

Section III

NEWSPAPER of THE YEAR

FINANCIAL TIMES

Wednesday September 2 1992 | EUROPE'S BUSINESS NEWSPAPER | D8523A

Hurricane Andrew insurers prepare for record claims

US insurers expect to pay out an estimated \$7.3bn in Florida as a result of Hurricane Andrew – the costliest disaster the industry has ever faced. The figure is the first official tally of the damage resulting from the hurricane, which ripped through southern Florida last week. In the battered region it is estimated that 275,000 people still have no electricity and at least 150,000 are either homeless or are living amid ruins. Page 12

SmithKline Beecham, Anglo-US pharmaceutical group, is to make far-reaching changes in research and development, involving 150 redundancies among UK research staff, a £200m (\$398m) investment in new R&D facilities and withdrawal from long-term research in gastro-intestinal drugs. Page 13

US may sell F-15s to Saudia Arabia: The Bush administration has indicated to some American Jewish leaders that it intends to proceed with a \$5bn sale of as many as 72 F-15 aircraft to Saudi Arabia, Jewish sources told Reuters. A White House official said no decision on the sale had been reached. Page 3

New UK share indices prepared: Plans for new UK stock market indices, which would cast more light on the performance of the market, particularly of second-rank UK companies, have been prepared. Page 13

Battle-scarred QE2 floats again

Tugboats guide the ocean liner QE2 from its dry-dock in Boston as it prepares to sail to Hamburg, Germany, for further repairs on damage caused when it struck an underwater object off the coast of Massachusetts last month.

German riots may lead to boycott: German politicians are warning of a possible foreign boycott of German products and a halt in investments in east Germany as a result of continuing militant rightwing attacks on asylum seekers. Page 2

Gulf Air in \$600m Airbus order: Airbus Industrie strengthened its grip on the Middle East aircraft market with an order worth nearly \$600m from Gulf Air, jointly owned by Oman, Qatar, Bahrain and Abu Dhabi. Page 4

Nicaraguan aid threatened: Nicaragua's hopes of receiving more than \$100m of promised aid from Washington have been dealt a blow by Republican staff on the US Senate foreign relations committee who called for an indefinite suspension of all US help. Page 4

Boeing, world's largest manufacturer of commercial jets, is set to open itself up to greater collaboration with other international aerospace companies. Page 13

Collor impeachment set in motion: Brazil's first impeachment process was set in motion with a formal petition to the president of Congress against President Fernando Collor, who has been linked to a multi-million-dollar corruption scandal. Page 4

Dai-Ichi Kangyo Bank, Japan's largest commercial bank, began a restructuring intended to show that the banking industry is worthy of the public support on offer from the Japanese government. Page 13

Total, French oil group, reported net profits down by 47 per cent to FFr1.91bn (\$406.3m) from FFr3.61bn in the first half of the year. Page 15

Westar Mining, Canada's biggest coal exporter, slid into bankruptcy with total debts of about C\$400m (\$334m). Page 15

Dagwood quits his job after 59 years:

The world's longest suffering salaryman is quitting office life after 59 years. Dagwood Bumstead – whose pleas for a pay rise were inevitably greeted by a swift kick from Mr Dithers, his irascible and tight-fisted boss – is abandoning the daily perils of the car pool to work for the catering business run by his wife, Blondie. His late career change will be revealed in newspapers next Sunday.

■ STOCK MARKET INDICES		
FT-SE 100	2,298.4	(–14.2)
Yield	5.26	
FT-SE Eurotrack 100	1,067.79	(–5.75)
FT-A All-Share	1,089.89	(–0.6%)
FT-A World Index	N/A	
Nikkei	17,740.86	(–321.06)
New York:		
Dow Jones Ind Ave	3,266.26	(+8.91)
S&P Composite	416.07	(+2.04)
■ US CLOSING RATES		
Federal Funds	3¼%	(3¼%)
3-mo Treas Bills: Yld	3.209%	(3.208%)
Long Bond	98½	(98½)
Yield	7.372%	(7.404%)
■ LONDON MONEY		
3-mo Interbank	10⅝%	(Same)
Liffe long gilt future:	Sep 94½	(Sep 94½)
■ NORTH SEA OIL (Argus)		
Brent 15-day (Oct)	\$20.825	(19.675)
■ Gold		
New York Comex (Sept)	\$340.8	(339.9)
London	\$342.45	(340.0)

■ STERLING		
New York:		
\$	2.002	(1.988)
London:		
\$	1.997	(1.982)
DM	2.7825	(2.7875)
FFr	9.485	(9.5025)
SFr	2.475	(2.495)
Y	245.5	(244.25)
£ Index	92.1	(92.0)
■ DOLLAR		
New York:		
DM	1.39	(1.4028)
FFr	4.7385	(4.782)
SFr	1.2365	(1.25)
Y	122.855	(123.095)
London:		
DM	1.3935	(1.407)
FFr	4.75	(4.795)
SFr	1.2385	(1.2585)
Y	122.9	(123.25)
\$ Index	58.2	(58.6)
Tokyo close Y 123.05		

Austria	Sch30	Hungary	Ft192	Malta	Lm0.50	S.Arabia	SR9.00
Bahrain	Din1.250	Iceland	IKr180	Morocco	MDh15	Singapore	S\$4.10
Belgium	BFr60	India	Rs20	Neth	Fl 3.50	Spain	Pta200
Bulgaria	Lewa25	Indonesia	Rp3900	Nigeria	Naira20	Sweden	SKr14
Cyprus	C£1.00	Israel	Shk5.50	Norway	NKr15.00	Switz	SFr3.00
Czech	Kcs35	Italy	L2500	Oman	OR1.50	Syria	SyP50.00
Denmark	DKr14	Jordan	JD1.50	Pakistan	Rs35	Thailand	Bht50
Egypt	E£4.50	Korea	Won 2500	Philippines	Pso45	Tunisia	Din1.250
Finland	FM10	Kuwait	Fils 600	Poland	Zl 18,000	Turkey	L6000
France	FFr6.50	Lebanon	US\$1.25	Portugal	Es190	UAE	Dh10.00
Germany	DM3.30	Lux	LFr60	Qatar	QR12.00		
Greece	Dr250						

European share prices decline as investors fear prospect of higher interest rates

Dollar hits low against DM

By James Blitz and Peter Marsh in London

A FRESH WAVE of investment in the D-Mark yesterday pushed the dollar to a new low against the German currency and depressed share prices across Europe on fears of increased interest rates.

The stronger D-Mark created further tension in the European exchange rate mechanism, depressing several of the weaker currencies against the D-Mark and pushing both sterling and the Italian lira closer to their ERM floors.

The pound's London close against the D-Mark of DM2.7825 was its lowest level since Britain joined the ERM in October 1990.

However, the dollar's weakeness pushed the pound above the \$2 level during the day for the second time in two weeks. In London, the pound later finished a shade lower at \$1.9970, up just under 1 cent on the day.

The stronger D-Mark triggered widespread investor disquiet at the prospect of higher interest rates in Europe at a time when economic activity is generally weak.

On the London stock market, the FT-SE 100 index of leading shares finished 14.2 points down at 2,298.4, just above the day's lows. Bourses in Paris, Frankfurt and Milan all fell by between 0.6 per cent and 1.6 per cent.

The move out of dollars into D-Marks was assisted by a report

from the US National Association of Purchasing Managers, which underlined the slow nature of the US economic recovery.

If pressure continues on weak ERM currencies, including the pound, lira and French franc, European central banks may be forced to support them. This would happen either by the central banks intervening on the foreign exchanges to buy the currencies, or by lifting borrowing rates.

As investors switched funds from dollars into D-Marks, the US currency fell to a new all-time low of DM1.3895. Athough it later gained ground slightly in late New York trading, the dollar remained more than 1 pfennig below Monday's close at DM1.3903.

Against the D-Mark, the pound drifted down during the day losing more than half a pfennig. It closed in London within half a pfennig of its ERM floor against the D-Mark of DM2.7780, before firming slightly in New York to DM2.7840.

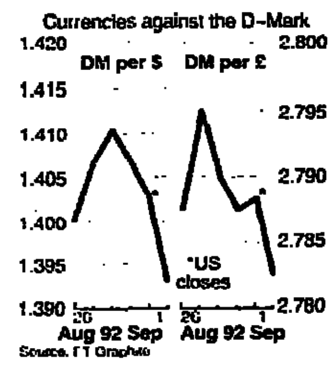
The lira also came under pressure, closing in London at L764.6, down from L763.75 the previous night and close to its floor of L765.40.

European stock markets were given little help from Wall Street where, in quiet trading, the Dow Jones Industrial Average shifted weakly to higher levels. At the close in New York the Average stood at 3,266.26, up 8.91.

On the currency markets, there was no clear sign of central bank intervention to support either the dollar or sterling in generally thin trading. However, at one stage in European trading, the dollar was lifted by unsubstantiated rumours of intervention by the US Federal Reserve to buy dollars for D-Marks.

Traders reported widespread selling of dollars for D-Marks from investors around the world, particularly large fund management groups. In recent weeks, investors have bought D-Marks in large volumes because of the big difference between German and US interest rates.

In Britain, the three month interbank rate, an important



Source: FT Graphite

Continued on Page 12

Waigel calls for issue of 'Germany bonds'

By Christopher Parkes in Frankfurt

A NEW financial instrument, the "Germany bond", to help Bonn plug gaps punched in the federal budget by the costs of unification, was suggested yesterday by Mr Theo Waigel, the German finance minister.

The issue would offer interest earnings below market rates, but holders' income would not be taxable, he said.

He also proposed that workers taking time off for sickness should work overtime without pay to compensate. The money thus saved would go instead towards care for the elderly.

The government, which has repeatedly promised that there will be no further tax increases, is now searching desperately to find ways of raising revenues through indirect methods.

The initial task is to fund the DM150bn (\$107bn) pumped by Bonn each year into the east of the country. But Bonn is also under pressure from the Bundesbank, the central bank, to rein in public spending and reduce national debt at a time when the economy is under strain because of recession abroad and stagnation at home.

Germany's total public sector debt – DM1,170bn, or 41.7 per cent of gross national product at the end of last year – is on target to hit 50 per cent of GNP at the end of 1995, or DM2,000bn.

As Mr Waigel said yesterday at a meeting of the federal association of taxpayers, some DM350bn of the total accounted for debts run up by the former east German government and the Treuhand privatisation agency.

Accumulated debts of the railway system are also heading towards DM400bn. Meanwhile, the state-subsidised health service will report a DM10bn deficit this year alone.

Other revenue-raising ideas which have emerged in recent weeks include motorway tolls or increased oil duties – hence more expensive petrol – ostensibly to cover the cost of subsidising the railways. Health service patients are also being asked to pay an extra DM3bn in charges to ease the welfare system's deficits.

Mr Waigel's suggestions , followed a much-derided idea from other coalition politicians that people on high incomes who did not invest in east Germany, should be forced to buy non-interest bearing bonds.

While the minister said the idea was worth considering, he appeared concerned about the effects of such a novel instrument on capital markets, interest rates and on the standing of Germany in the markets. However, it should be examined he told the federal taxpayers' association.

German riots, Page 2

Mr Kiyoshi Kaneko, the governor of Niigata, leaves his office to announce his resignation following allegations of illegal payments to Japan's ruling party politicians Report, Page 12

SBC names new chief in move to tighten controls

By Ian Rodger in Zurich

SWISS Bank Corporation, the country's second largest bank, said yesterday that Mr Georges Blum, head of its commercial banking division, would become chief executive next spring.

The decision appears to reflect a desire to tighten management controls and to improve the bank's image.

Mr Franz Galliker, supervisory board chairman since 1984, will retire and Mr Walter Frehner, the current chief executive, will become chairman. An SBC spokesman said the new appointment was a "normal change".

The bank, however, has been caught with large loans to companies that have collapsed in the past few years, including Robert Maxwell's corporate empire, the US retailer RH Macy, the Canadian-based property developer Olympia & York, and the Omni conglomerate in Switzerland.

Earlier this year, Moodys, the US ratings agency, downgraded its rating of SBC bonds from AAA to AA-1.

While the two other big Swiss banks, Union Bank of Switzerland and Crédit Suisse, reported profit gains in the first half, SBC suffered a 7.7 per cent slide in pretax profit to SFr1.24bn (\$1bn) and warned that provisions for bad loans would be larger this year than it had originally thought.

Mr Blum, who as the bank's chief credit officer has had to extricate the bank from some of these problem cases, has a reputation as a tough commercial banker. An SBC spokesman said it was always clear that the next chief executive would be selected from within the executive board.

He noted that Mr Blum had handled the bank's involvement in the 1988 liquidity crisis in the Co-op retail group in Germany.

Mr Blum joined the Lausanne legal office of SBC in 1961. In 1978, he was sent to general management in Basle. He returned to Lausanne as senior vice-president in 1980. Since 1984, he has been a member of the bank's executive board.

He also is known as an effective public speaker. Analysts say SBC has been less popular among investors than the other two big Swiss banks in recent years in part because it has lacked an effective spokesman.

SBC said that Mr Galliker would remain on the board at least until 1994 when his current term expires.

Background, Page 14

French officials rally in support of Mitterrand

By William Dawkins in Paris

FRENCH government and senior Socialist party officials yesterday rejected calls for President François Mitterrand to resign to ensure a Yes vote in the September 20 referendum on European union.

Pressure for the president to resign emerged in Le Monde, with an article by Mr Alain Minc, a leading leftwing liberal, suggesting that Mr Mitterrand should announce that he will stand down once France has ratified the Maastricht treaty.

The call, repeated by Mr Dominique Baudis, executive president of the centre-right CDS party, echoes earlier rumours within the Socialist party that Mr Mitterrand was considering early retirement.

He is expected to confirm that he intends to carry on as president when he appears on Thursday evening in a live television debate with Mr Philippe Séguin, one of the main anti-Maastricht campaigners in the divided opposition Gaullist party.

Mr Minc argued that if the president offered to resign, the electorate would be able to vote without being influenced by their feelings over Mr Mitterrand's waning personal popularity.

"He alone can turn back the temptation to regicide which . . . is assassinating France," Mr Minc said, referring to the surprise emergence of a majority against Maastricht in recent *polls*.

Mr Laurent Fabius, first secretary of the Socialist party and a former prime minister under Mr Mitterrand, scorned the idea. Speaking on French radio, he said: "The president of the republic cannot put his resignation in the balance because one cannot mix a referendum on a major question and internal political deadlines."

Mr Mitterrand's second seven-year term ends in spring 1995. No mainstream opposition leader has called for him to sacrifice his job to the treaty.

Officials at the Elysée palace said Mr Mitterrand had not changed his position that he saw the referendum as a vote on Europe rather than on his per

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CONTENTS

German riots may lead to foreign boycott

By Leslie Colitt in Berlin

GERMAN politicians are warning of a possible foreign boycott of German products and a halt in investments in east Germany as a result of continuing militant right-wing attacks on asylum seekers in the east.

Mr Heiner Geissler, deputy parliamentary leader of the Christian Democratic (CDU-CSU) party, yesterday cautioned against the danger of a boycott if people believed internationally that racism was being resurrected in Germany.

"Every third job [in Germany] is dependent on foreigners buying our goods," Mr Geissler said.

This week right-wing militants in Brandenburg, which surrounds Berlin, assaulted hostels for asylum seekers in Cottbus and two other towns. Brandenburg had previously attracted pledges of considerable foreign investment and was held in high esteem among its foreign partners, he said.

More than 100 policemen in Cottbus prevented almost as many young extremists on Monday night from assaulting a hostel filled with nearly 1,000 asylum seekers. The youths had attacked the hostel on the previous three nights. Young right-wingers also threw stones at a hostel housing mainly Romanian gypsies near Leipzig who had fled there after their tents were set afire on Sunday.

A group of youths also hurled Molotov cocktails and paving stones on Monday night at a hostel for foreigners in Lübz in the state of Mecklenburg-Vorpommern.

The previous night a monument in Berlin to tens of thousands of Jews sent to the death camps by train from 1940 to 1944 was badly damaged by explosives. Mr Eberhard Diepgen, Berlin's mayor, condemned the attack as an "ugly provocation".

Mr Rudolf Seiters, the German interior minister, announced at an emergency meeting on Monday that Bonn would strongly support the five east German states in setting up special police and surveillance units to combat extremism.

Police in Rostock display a high level of demoralisation

By Leslie Colitt in Berlin

THE near-paralysis of the east German police in the face of right-wing violence against asylum seekers in Rostock last week may have surprised those who recall the swift suppression of opposition by the Communist police state before its collapse in 1989.

It also contrasted sharply with the tough tactics used by the west German police against many of the protesters at the economic summit in Munich in July.

But the police in the former East Germany - as in other Communist countries - were in reality a remarkably inept arm of coercion. Far more effective intimidation was assured by the all-seeing state security force, the Stasi, and its tens of thousands of informers.

"Policemen in the East were part of the system of blindly obeying orders," says Mr Dieter Schenk, deputy president of the Berlin police.

Rank and file policemen were generally loyal servants of the old regime. After unification their senior officers remained largely in place and only at the top were commanders replaced by west Germans.

In a state unable to conceive of any threat but a political conspiracy, legions of police often proved incapable of coping with riots by football hooligans. These were the forerunners of the frustrated youths in Rostock's Lichtenhagen estate last week.

Equally, the police and the leadership were taken totally by surprise when dissidents were able to disrupt an official Communist rally in January 1988 in east Berlin.

The fall of communism, and the police's patent ineffectiveness in halting this, led the demoralised force to adopt a

The demoralised east German force adopted a virtually invisible profile

virtually invisible profile after unification. This was dramatically evident in Rostock at the start of the right-wing attacks.

Some of the problems encountered in east Germany were avoided in eastern Berlin, where policemen in the eastern part of the city were immediately assigned a western "minder" counterpart after unification.

The trouble in Rostock obliged Bonn to draft in thousands of reinforcements from the west to back up the eastern force and prompted Monday's announcement that the five east German states would get help setting up special anti-extremist surveillance units.

NEWS IN BRIEF

Swedish capital flows out

AS MUCH as SKr22.1bn (£2.3bn) of capital flowed out of Sweden last week in the crisis of financial confidence that forced the country's Central Bank last Wednesday to raise its interest rate by 3 percentage points to 16 per cent, writes Robert Taylor in Stockholm.

The size of the capital outflow, which was published by the Central Bank yesterday after the markets closed, was much larger than expected. It is the biggest outflow since last November after Finland's devaluation of the markka forced the Swedish Central Bank to raise its interest rates by 6 per cent.

The total amount in Sweden's capital reserves has fallen to SKr95.2bn.

During the past two days the money markets and the bourse in Sweden have remained nervous about the immediate economic outlook. But yesterday's news about the magnitude of the capital outflow could lead to further anxiety when trading resumes this morning.

Short-term interest rates have continued to rise since the middle of last week. Yesterday the bourse general share index fell by 2.6 per cent. This followed a 0.9 per cent decline on Monday.

Sweden's centre-right coalition government continues to insist no new economic measures are needed to deal with the financial crisis.

Policy doubts hit value of rouble

The rouble lost a further 2.6 per cent against the dollar yesterday after tumbling 22 per cent last week and a central bank official renewed speculation that Moscow could return to a system of fixed exchange rates, writes Leyla Boulton in Moscow. The ailing Russian currency, suffering from a chronically thin foreign exchange market, high inflation and expectations of a loosening of monetary policy, fell to Rbs210.5 to the dollar from last week's low of Rbs205.

Mr Alexander Hrandruyev, a deputy chairman of the Russian central bank, was quoted as saying the bank might set the rate at an average for the previous month's trading.

Czech pledge to foreign investors

There is no alternative to a "civilised divorce" between the Czech lands and Slovakia, Mr Karel Dyba, the Czech minister for economic policy, told foreign investors in London yesterday, writes Anthony Robinson.

But he pledged that both sides would work out "an inventive solution" which reflected their high degree of economic integration and would guarantee the free movement of goods, people and capital after their division into separate states at the end of this year,

Moslem victims locked up in cattle sheds

Lara Marlowe visits two Serb prison camps in Bosnia with the head of the CSCE

An armed Serb boy guards his relatives harvesting wheat in a field just north of Sarajevo

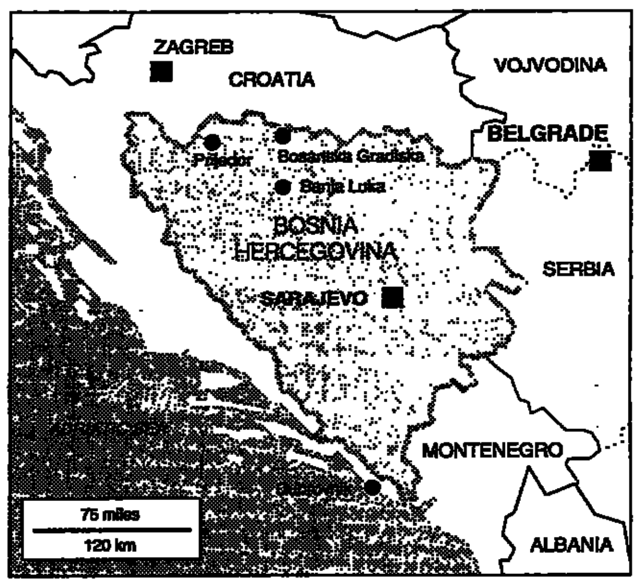
OVER the next few days, a delegation from the Conference on Security and Cooperation in Europe, will report back after an inquiry into human rights in Bosnia-Hercegovina. Led by Sir John Thomson, a former British ambassador to the United Nations, he visited prison camps set up by the Serbs in Bosnia. The Serbian authorities claim the camps at Manjaca and Trnopolje, both visited by Sir John's delegation, are the only ones left in northwestern Bosnia. However, relief officials suspect thousands of Moslem women and children - the families of the men imprisoned in the other two camps - may be held at Duboj, north of the republic.

Most are victims of the "ethnic cleansing" of the Kozarac community near Prijedor, where 22,000 people have been expelled from their homes.

Serbian officials want to exchange prisoners for Serbs held by Moslems. They expressed anger at the international outcry over the camps and told the CSCE delegation that 6,000 Serbs allegedly held in Croatian and Moslem-run camps had been ignored. At Manjaca, high in the mountains near Banja Luka, 3,640 male prisoners are housed in the cattle sheds a former dairy farm surrounded by barbed wire, Alsatian guard dogs, watch-towers and minefields.

Lt Col Bozidar Popovic, the camp commander, claimed to Sir John that all the inmates were military POWs. But humanitarian aid officials who have interviewed them concluded that all but four of the internees - including 390 men under the age of 16 or over the age of 60 - are civilian victims of "ethnic cleansing".

Although some have gained 20 kilos since food improved with visits to the camp, many still appear emaciated. Col Popovic, who shouts at all times and frequently cites the Geneva Convention, is apparently trying to blackmail the Bosnian government, led by President Alija Izetbegovic, and relief officials by refusing to make preparations for winter, saying that he hopes "humanism will prevail on the other side".



The transfer of Manjaca's Moslem prisoners to the Moslem-held area of Bosnia might alleviate the men's suffering and in some cases allow them to be reunited with their families. But it would also aid the Serbs in achieving their goal of an "ethnically pure" Serbian Bosnia.

The 2,000 inhabitants of the Trnopolje "open reception centre" in north-western Bosnia, live just a few km from their former homes in Kozarac and can see the minaret of their mosque from the carpark where they sit shirtless in the hot sun under makeshift tents.

The prisoners say that more than 5,000 Moslems from Kozarac were killed by Serbian militiamen when the town was "cleansed" late in May.

As Sir John discovered, some are allowed to walk to their plundered and dynamited houses to pick fruit from their gardens.

Serbian refugees have moved into the few homes that were left standing.

In theory, the Moslems are free to leave, but they have no homes to return to - in most cases, they have been completely destroyed - and Serbian gunmen near the camp fire shots at night to intimidate prisoners.

Mr Milomir Stakic, the mayor of Prijedor, told the CSCE delegation that the Serbs were fighting "Moslem extremists" in Kozarac, and that Moslem survivors of the fighting there continue to attack Serbian forces from the nearby Kozara Mountains - once a Serbian stronghold against the Germans.

But the Moslems, indistinguishable from their fellow south Slavs, are secular. Even in the few Mosques still standing, there is not the slightest hint of fundamentalism, either in dress or ritual.

In regions which have not yet been completely ethnically cleansed, Moslem households are required to fly a white flag to show they have no weapons in their house, and "as a sign of our loyalty", says the local Imam in the village of Cela, about 15km from Trnopolje.

The white flag on the Cela mosque did not stop drunken Serbian soldiers from setting fire to it in August, killing an old Moslem man and throwing his body into a well. Fifteen men were arrested and held for several days for "interrogation". One never returned. Another has been sent to the Manjaca prison camp. The Imam has stopped making prayer calls from the minaret, and villagers have promised not to hold any public meetings.

A Serbian policeman stands outside the mosque each Friday, presumably to monitor sermons. Villagers are afraid to travel into Prijedor.

"We have made a deal with the local Serb authorities. We will not oppose them, and they will not harm us and they will protect us," the Imam told Sir John and his fellow delegates who are to draft a report on their visit when they return to London at the weekend.

Back in neighbouring Croatia, western diplomats have little hope in the implementation of the London Conference. Few believe that even if Bosnia's Serbs give back a tiny percentage of the territory they have seized, they will allow the Moslems to return.

Brussels confidence in EMS

THE European monetary system is so strong that it would easily survive French rejection of the Maastricht treaty in the national referendum on September 20, Mr Henning Christophersen, the European commissioner for economic affairs, said yesterday, Reuter reports from Copenhagen.

"It is my opinion that there is both the liquidity and the political will to maintain the EMS system," Mr Christophersen, a Dane, said at a seminar arranged by the Danish financial daily newspaper Boersen.

"The EMS has proven to be so strong that it will easily be able to survive a French 'no' vote," he said.

There have been fears that a French rejection might not only sink European Community plans for economic and monetary union outlined in the Maastricht treaty, but also threaten the system of exchange rate management within the EMS which imposes strict limits on the extent to which member currencies can fluctuate.

The Maastricht treaty on political, economic and monetary union in the Community has already been narrowly rejected by Danish voters in a June referendum, and a "no" vote by France would effectively kill it.

Bulgaria to resume paying debt interest

BULGARIA WILL start paying off overdue interest on its $12bn foreign debt on September 15, Mr Ivan Kostov, finance minister, said yesterday, Reuter reports from Sofia. "The first payment will be 25 per cent of Bulgaria's overdue interest," he said.

Bulgaria's last communist government suspended payments of principal on foreign debt in March 1990 and froze interest payments in June of that year. The country owes $10bn to more than 300 commercial banks and $2bn to the Paris Club of official creditors.

Mr Kostov said Bulgaria would pay $10m each month but did not specify how the money would be shared between the commercial banks and official creditors. Further negotiations with the London Club of commercial creditors had also been set for October 5.

The start of payments would not affect the exchange rate between the Bulgarian lev and the dollar on the Bulgarian currency market, where daily turnover is around $40m.

Last month Mr Kostov called on the Bulgarian central bank to scale down its dollar buying on the foreign exchange market in a move interpreted by economists as an attempt to boost the lev to make dollar-denominated debt repayments cheaper.

Far right rises as Hungary's economy sinks

Issues of race and territory have swept in with the new political season, writes **Nicholas Denton**

HUNGARY'S far right, restless but dormant for the past two years of moderate conservative government, has burst into life without warning. Its issues of race and territory swept more mundane matters of budgets and economic reform off the agenda as parliament reconvened this week as the new political season began after the summer recess.

The political talk is suddenly focused on the danger of "Balkan chaos" and Hungary's prized stability – which made the country the favourite for western investors – is looking surface-deep.

What stirred the waters was an article in the party weekly by Mr Istvan Csurka, a vice president and leading ideologist of the Hungarian Democratic Forum, the ruling centre-right party. It has been received as a manifesto so explosive that it has been termed an "intellectual Molotov cocktail".

Mr Csurka, a former novelist with the bulk – both physical and political – of a Jean Marie Le Pen, called true Hungarians to arms in a tract which opponents have described as nothing less than a foundation for Hungarian neo-Nazism.

He demanded an end to moderation and compromise, linking Jews, communists, liberals, the International Monetary Fund and bankers in a conspiracy to destroy the government and smother Hungary's national revival.

Anti-Semitic remarks littered the text, with Mr Csurka writing of the influence of "the Paris, New York and Tel Aviv networks" and of "the Hungarian Jewish position of hegemony".

In a sideswipe at western interference, he accused the IMF of pulling the strings behind the new financial elite, comparing the institution to the occupying Red Army which propped up the communists.

He even called into question the Trianon peace treaty, the territorial settlement after the First World War which cost Hungary 60 per cent of its land area and left 3.5m ethnic Hungarians living in neighbouring states. With borders starting to unravel all over the Balkans and eastern Europe, he relished "the opportunities to create a new Hungarian living space".

Mr Csurka's essay can – and has been by opposition politicians – be dismissed lightly as the rantings of an anti-Semite who has come out of the closet. More significant, however, has been the reluctance of Mr Jozsef Antall, the moderate prime minister, and the party he leads, to condemn the author outright and force his resignation.

After a week of mounting pressure, the prime minister this week belatedly and begrudgingly distanced himself from Mr Csurka's standpoint, describing parts of the essay as "politically mistaken and harmful".

But Mr Antall reassured Mr Csurka and his *Volk-national* right-wingers that there was an important place for them in the governing party. The latter's national committee went even further in support of Mr Csurka, concluding in its communique: "The bulk of the essay's foundations are very useful in working out the Hungarian Democratic Forum's new programme."

It is the party's accommodation of Mr Csurka's outburst, rather than the words themselves, that is causing observers to look more seriously at the challenge from the far right.

Mr Csurka, one of the founding heroes of the Forum, is believed to command the allegiance of up to a third of the ruling party's activists. Mr Antall, an innately cautious personality, can ill afford to force a deep split within his own party when both his coalition partners are also increasingly rebellious. He is even less disposed to react at a time when his government is trailing badly in the opinion polls and still reeling from two by-elections at which ministers suffered humiliating defeats.

But Mr Csurka's constituency is more than just a faction within the Forum, and the debate about his essay goes beyond internal party politics. He has articulated the frustration of many Hungarians with the government's apparent inability or reluctance to purge those people who made their money or influence under the former communist regime. Their indignation has grown as Hungary's economic depression has deepened and thrown the growing wealth of communists-turned-businessmen into relief.

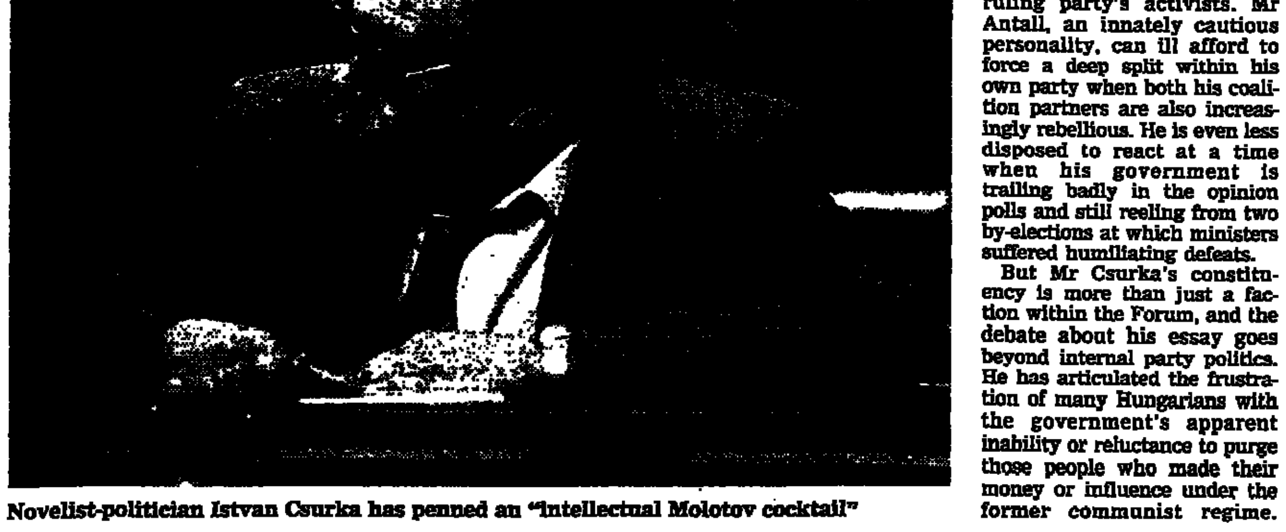
Furthermore, Mr Csurka's extreme rhetoric taps a strong Hungarian vein of virulent nationalism and anti-Semitism. In their hearts, many Hungarians have not given up the territories they lost after the first world war, nor stopped casting around for scapegoats for this national tragedy.

Territorial ambition and racism led to Hungary's wartime alliance with Nazi Germany when 600,000 Hungarian Jews died, most in German concentration camps, but up to 100,000 in Hungary at the hands of Hungarians, according to Jewish leaders.

But even Forum supporters who admit the anti-Semitism in Mr Csurka's thinking do not want to see him forced out. "Csurka cannot be evicted from the political scene. The best place for him is the Forum because the Forum can moderate him," says one.

The opposition predictably sees it the other way around. "Your party is the prisoner of Csurka," said Mr Laszlo Kover, an opposition leader, pointing accusingly across the parliamentary chamber at Forum MPs.

Their disagreement leaves open the question, and it is an old one: when moderates pander to extremists in order to tame them, who controls whom?



Novelist-politician Istvan Csurka has penned an "intellectual Molotov cocktail"

Georgia says Russian rockets killed soldiers

GEORGIA accused Russian forces of killing several of its soldiers in a missile attack in the Black Sea region of Abkhazia yesterday, but Moscow angrily dismissed the charge, Reuter reports from Moscow.

Mr Eduard Shevardnadze, the Georgian leader, said army commanders had told him several Georgians had been killed by Russian fire while crossing a river near the Abkhazian capital, Sukhumi. News agencies quoted him as telling the governing State Council that rockets had been fired from a Russian Defence Ministry laboratory.

The number of dead was not confirmed.

Moscow quickly denied the accusations as a "fabrication". A spokesman told Moscow Radio that some Russian army facilities were being "systematically shelled by Georgian formations" but the troops were remaining neutral.

Mr Shevardnadze said the incident could jeopardise talks with President Boris Yeltsin tomorrow aimed at seeking an end to fighting between Georgian forces and Abkhazian separatists in the unstable Black Sea region.

The former Soviet foreign minister said he had immediately telephoned Mr Yeltsin to seek an explanation. "Yeltsin assured me he could officially declare that no order had been given for Russian troops to interfere in this conflict," Mr Shevardnadze said.

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Premier of South Australia resigns

By Kevin Brown in Sydney

THE growing problems of the Australian Labor party were underlined yesterday when Mr John Bannon, premier of South Australia, resigned in the wake of A$3bn (US$2.1bn) losses incurred by a state-owned bank.

Mr Bannon has been under pressure since it emerged last year that property lending by State Bank of South Australia would cost taxpayers A$2.5bn, later increased to A$3.15bn.

Mr Bannon, Australia's most senior state leader, said he was taking political responsibility for the bank's losses to give Labor a chance of winning the next state election, due in 1994.

However, his departure after 10 years as premier may also mark the beginning of the end of a decade in which Labor has enjoyed uninterrupted control of the federal government and dominated the six state governments.

Mr Bannon was one of a group of Labor leaders who rescued the party from oblivion following the defeat of Mr Gough Whitlam's federal Labor government during a constitutional crisis in 1975.

The group, which dominated Australian politics through the 1980s, included Mr Bob Hawke, prime minister from 1983 to 1991, and Mr Neville Wran, Mr John Cain and Mr Brian Burke, who were respectively premiers of New South Wales, Victoria and Western Australia.

All have left office in the wake of declining popularity and, in some cases, financial problems. Mr Burke, who was later ambassador to Ireland, faces criminal charges in connection with alleged corrupt relationships between Labor politicians and Western Australian businessmen.

Labor has lost control of New South Wales and Tasmania, and is widely expected to be defeated in Victoria in October, in Western Australia next year, and in South Australia in 1994.

The federal government has been revitalised in the last nine months under the leadership of Mr Paul Keating, but trails the opposition conservative parties by about 10 percentage points. A federal election must be held by next June.

The only bright spot for the party is in Queensland, where Labor took office in 1989 following a corruption inquiry which fatally damaged the former National party government. Queenslanders are expected to return Labor in an election later this month.

John Bannon going to face the press yesterday under the gaze of members of his staff

A US policy on Iraq that excludes nothing

Bush's tougher stance may have consequences for all concerned. **Roger Matthews** reports

THE possibility of renewed US air strikes against Iraq will remain high – at least until voters pass judgment on President George Bush in early November – but the impact of the latest development in American Middle East policy seems certain to trouble whoever occupies the White House well beyond next year.

By creating an air exclusion zone over southern Iraq, Mr Bush has led the US a step deeper into the quagmire he sought so hard to avoid by limiting the Gulf war to the expulsion of Iraqi troops from Kuwait.

Saudi Arabia has had to accept an active American military presence for the foreseeable future, something both sides wanted to avoid. The alliance created to win the Gulf war victory can no longer stand the strain of public examination, as has been made clear by the questionable insistence of its leading members that United Nations Security Council resolutions cover the present military action. And by providing protection for two thirds of the Iraqi population, the US, Britain and France must take a greater responsibility for what that country's political evolution.

For obvious political reasons, Mr Bush has chosen to present this latest military action as essentially humanitarian: to protect the Shia population of southern Iraq against further suffering at the hands of President Saddam Hussein. To have suggested that the primary target is the removal of the Iraqi leader could but cast doubts on his overall Gulf war strategy at an electorally sensitive moment.

Less than 18 months ago, the Shias of southern Iraq were deemed of far less consequence to the western-led alliance than the Kurds in the north, even though their treatment at the hands of Baghdad was equally repugnant. Now, the Bush administration has persuaded itself that not only are the Iraqi Shias worthy of protection but that they care little for their co-religionists in Iran and that Tehran stands faint chance of drawing them into its sphere of influence.

It is a bold shift of attitude for a government whose priority throughout the last decade was to contain Iran and its export of militant Islamic fundamentalism, even to the extent of lending support to Mr Saddam.

One immediate consequence has been to unite most of the Arab world, Iran and Turkey in opposition to the air exclusion zone which they fear will divide Iraq into three, with the ruling Sunni minority controlling only the landlocked central sector and almost none of the country's oil resources.

The longer that Mr Saddam or his group retains power, the less likely it will be that the Kurds, and eventually the Shias, will be willing to relinquish the political gains they have made.

Saudi Arabia and Kuwait are the only two governments in the Gulf actively supporting the allied action and by so doing are emphasising their dependence on Washington. Early this year, the mood in Riyadh was one of self-congratulation. The Americans had appeared from over the horizon, had done the job, been paid and were going home. There must be less jubilation now. The sound of US warplanes taking off can again be heard. While some officials in Washington are congratulating themselves on the extra security provided for western oil supplies, others are wary of the October election in Kuwait, which is unlikely to enhance the image of that country's rulers.

How these pressures and commitments evolve in the short term may depend on the fate of Mr Saddam. His support at the centre may have been enhanced by the new threat posed to the unity of Iraq, but there is no doubt that sanctions are biting deeper.

If the latter is bearing heavily on the Iraqi leader, he might well step up his defiance of UN resolutions, sure that Mr Bush will react militarily and hopeful that the effect will be to distract the public and unite them against America. He has nothing to gain by accepting the status quo.

The worst that can happen to Mr Bush is that he will not be re-elected, despite having led his country to its greatest self-acclaimed feat of arms since the Second World War.

The sight of Mr Saddam still in power would be a miserable bequest to his successor, the more so since the US has in the past month chosen to bind itself more closely to unpredictable players, and to events which will not be controlled by military power alone.

Russia, aligning itself more closely with the west, announced yesterday it was sending two warships to the Gulf to help enforce United Nations resolutions on Iraq, Reuter reports from Moscow.

The armed forces chief-of-staff, Colonel-General Viktor Dubynin, told Itar-Tass news agency that the anti-submarine ship, Admiral Vinogradov, and a tanker, Boris Butoma, would sail from Vladivostok and be in the Gulf before the end of the month.

US may sell $5bn of F-15s to Saudis

THE Bush administration has indicated to some American Jewish leaders that it intends to proceed with a $5bn sale of as many as 72 F-15 aircraft to Saudi Arabia, Jewish sources said yesterday, Reuter reports from Washington.

A White House official said the F-15 sale was under consideration, but that a decision had not yet been reached. However, the sale would be controversial, especially in the middle of a presidential election campaign in which President George Bush is actively courting Jewish votes.

The sale might also cause concern because the Bush administration is publicly committed to stopping the arms race in the Middle East.

Defence officials said yesterday that they have had no indication that the Bush administration was about to notify Congress of the proposed sale. If approved by Congress, the deal could be worth as much as $5bn for the aircraft maker, McDonnell Douglas, and dozens of other US companies.

Israel and the powerful American Jewish community have vigorously opposed the deal. But their hopes of blocking it were dented when the Democratic presidential hopeful, Mr Bill Clinton, said last week that he would not object to the sale if it did not violate US security commitments to Israel. Saudi Arabia already has 84 F-15s.

In New York, officials of the World Jewish Congress said they had been informed by Israeli officials that Israel might be willing to drop its opposition to the sale if Saudi Arabia stopped supporting the Arab trade boycott of Israel.

Hurd heads EC mission to S Africa

By Mark Nicholson

THE TROIKA of EC foreign ministers will arrive in Johannesburg today on a two-day visit in which they hope to finalise a proposal to despatch up to 20 European observers to monitor township violence in South Africa.

Mr Douglas Hurd, the British foreign secretary, left London yesterday to head the mission, which the ministers hope might also catalyse progress towards a resumption of South Africa's stalled constitutional talks.

With Mr Uffe Ellemann-Jensen, Danish foreign minister, Mr Fernando Diez Barroso, Portuguese deputy foreign minister, and Mr Hans Andriessen, EC Commissioner for external affairs, he will meet leaders from all parties to the talks and members of the National Peace Secretariat, with which the EC observers would work.

The observers, to be drawn from experts in community policing across the EC, will join those already pledged by the Commonwealth under a United Nations sponsored plan to assist South Africa's year-old National Security Accord monitor and end violence in the townships.

Between 30 and 50 observers are expected to take part in the proposed monitoring.

The EC ministers also expect to discuss ways in which they could offer material support, perhaps including training, for the South African police.

Their visit will include a trip tomorrow to Alexandra Township for talks with a local dispute resolution committee formed as part of the peace accord.

The EC team saw signs that parties to the Convention for a Democratic South Africa are inching towards a possible resumption of talks.

● Former Zambian President Kenneth Kaunda said yesterday he had accepted an invitation to mediate between the African National Congress and the Inkatha Freedom party, Reuter reports from Lusaka.

The invitation had come from the peace secretariat.

Japanese car sales decline by 18.6% in August

By Steven Butler in Tokyo

A FURTHER decline in consumer spending in Japan was signaled yesterday by an 18.6 per cent plunge in car sales during August compared with last year.

The decline is one of the steepest on record and is certain to dash any lingering hopes of a recovery in car sales in the second half of the year.

The severity of the decline is also an indication of a further erosion of consumer confidence amid signs that Japan's labour market is slackening considerably.

Total vehicle sales, including trucks, were off by 16.3 per cent, measured by vehicle registrations.

None of Japan's leading vehicle makers escaped the decline, although Nissan sales were particularly hard hit, falling 25.2 per cent. Nissan said on Friday that it expected to post a net loss of Y20bn ($162m) in the current fiscal year.

Vehicle sales in the first eight months of the year were down by 5.9 per cent.

● Mr Tsutomu Hata, finance minister, said yesterday that the total size of the government's package of emergency economic measures, announced on Friday, would reach Y12,200bn, compared to the Y10,700 originally announced. The increase is accounted for by higher spending by public utilities, including power and gas companies and by Nippon Telegraph and Telephone.

Mr Yasushi Mieno, the central bank governor, meanwhile said that Japan's industrial sector needed to continue with extensive cuts in production in order to reduce excess inventories. Mr Mieno said that the process of adjusting inventories, which had begun in the spring, had come to a temporary halt.

Non-aligned talks hear plea for changes at UN

By William Keeling in Jakarta

PRESIDENT Suharto of Indonesia, opening the summit of the Non-Aligned Movement (NAM) yesterday, warned that "the new world order" had yet to change the "old patterns of domination of the strong over the weak and rich over the poor".

He spoke of "the absurdity of net financial resources now flowing from the developing world to the developed countries" and was supported by Mr Boutros Boutros Ghali, secretary-general of the United Nations, who described poverty as "the last challenge we must take up at the close of the century".

Mr Suharto called for the "revitalisation, restructuring and democratisation" of the UN. This received the tacit backing of Mr Boutros Ghali who told delegates "the voice of the Third World, the voice of three quarters of men and women who live on this planet, must be represented, heard and understood". Mr Boutros Ghali said NAM and the UN had "produced a story of partnership and practical co-operation" but, in a review of his organisation, he noted many of its activities were focused on NAM member states.

He estimated at 15,000 the military personnel under UN command in the former Yugoslavia – a founding member of NAM. He said that to date, more than 10,000 tonnes of relief supplies have been airlifted to the area and almost 2m refugees there were under UN care.

The secretary-general said the UN in Somalia was operating "under conditions of military hostility" and planned to increase its forces from 500 to 3,500 to assist the famine relief effort. In Afghanistan, the UN is pressing for a cessation of hostilities and organising humanitarian aid, while in Cambodia it is engaged in "a vast effort at post-conflict nation-building".

Mr Boutros Ghali said the end of the cold war was "a harbinger of concord and unity", but he warned "the temptation to dominate, either worldwide or regionally, remains".

Prince Norodom Sihanouk, president of Cambodia's Supreme National Council, (right) greets Khieu Samphan, Khmer Rouge leader

Iata worried by passenger trend

The air transport industry is becoming increasingly worried by the slower than expected rate of recovery in international passenger traffic, writes Paul Betts, Aerospace Correspondent.

Although passenger traffic increased by 10 per cent in July over the same month last year, the International Air Transport Association (Iata) said the latest traffic figures were worryingly low as 1991 was an abnormal year because of the impact of the Gulf war on air travel.

Aerospace survey, section III

Manila hopes rain will aid economy

The Philippines economy was almost flat in the first half of the year because of electricity shortages and a drought in the south, Reuter reports from Manila. Officials said the economy may improve in the second half as the onset of rains had broken a drought covering southern Mindanao island and helped arrest the power crisis.

Iran refuses island compromise deal

Iran has effectively annexed a small Gulf island it jointly controlled with the United Arab Emirates for the past 20 years, Reuter reports from Abu Dhabi. Diplomats said Tehran was refusing to compromise over the island of Abu Musa, lying about half-way between the UEA and the Iranian coast.

Somalia provides key test of UN resolve

Other African states may need to be pulled from the debris of the cold war, writes **Julian Ozanne**

THE United Nations decision to commit at least 4,200 blue berets and support staff to help restore order and distribute humanitarian relief in war-ravaged Somalia represents the most dangerous and extensive operation the UN has undertaken in black Africa.

The move could also establish a precedent for the role of the UN in the post-cold war era on a continent beset by crises, civil war and famine caused by ethnic conflicts.

Not since the Katanga crisis in southern Zaire in the early 1960s has the UN sent armed troops to a conflict in Africa.

And although last week's unanimous decision by the Security Council to dispatch a substantial force to Somalia was taken for ostensibly humanitarian reasons – relief workers are trying to alleviate starvation threatening 4.5m people – it is inevitable that the UN will be sucked into an even greater role in peacekeeping operations and forging a political settlement between the warring clan factions.

Some observers even go as far as to say that given the complete collapse of government, law and order and civil society the UN will be forced to consider some form of trusteeship for Somalia before the process of nation rebuilding can begin.

Behind the Security Council's decision lie a number of factors: international criticism that the UN has not done enough to prevent starvation in Somalia; guilt that the world is paying more attention to the "rich man's war" in Yugoslavia and ignoring the plight of faraway, impoverished Africans; the interventionist bent of Mr Boutros Boutros Ghali, the secretary-general who has pushed harder than any other UN official for a fully fledged military intervention; the relatively recent opportunity created for armed intervention in Africa by the end of the east-west conflict; and a growing recognition that solving Africa's problems when the rot has set in so deeply is going to take a sustained international effort and significant resources.

More importantly the decision also recognises a principle long argued by African relief experts themselves: that saving human lives must override the surreal claims to sovereignty made by African warlords, dictators and rebel leaders.

For the past 18 months a group of African intellectuals has said that the world's acceptance of this humanitarian principle in Kurdistan last year, in the face of opposition from President Saddam Hussein should be extended to Africa.

They say that a number of other African countries such as Sudan, Zaire, Angola, Mozambique and Liberia – all victims of the Cold War – either have disintegrated into ethnically-based civil war and famine or are in danger of doing so and therefore should be candidates for some kind of international intervention despite the opposition of their putative governments which make claims to sovereignty.

The risks of not intervening now, they say, are that the situation will only deteriorate further until images of skeletal children dying from starvation, like those from Somalia, will become increasingly commonplace in the continent.

"The west has got to stop responding to Africa's crises on an emergency basis when it is too late to save hundreds of thousands of innocent women and children who give no legitimacy to the governments which claim to represent them," Mr Abdul Mohamed, an expert on humanitarian relief in the Horn of Africa, said yesterday.

"We've got to get beyond the band aid mentality – rushing in when the alarm bells have almost stopped ringing because everybody is dead. We must work to create some longer term preventative solutions so the crises stop being endemic."

Somalia is a fitting place for the UN to start given that both Washington and Moscow, who played cold war politics by proxy in the Horn of Africa and built up a huge weapons stockpile, bear so much responsibility for the severe crisis now facing the devastated country.

However, whether the UN intervention in Somalia will mark the beginning of a fundamentally new approach to intervention in Africa's disaster cases will depend on the success of an operation which is fraught with dangers.

Last Friday, two unarmed UN military observers, part of an international team of 50, were shot and seriously wounded by clan gunmen in the anarchic capital of Mogadishu. Several of Somalia's warlords, particularly General Mohamed Farar Aideed, leader of the coalition Somali National Alliance and Colonel Omar Jess, leader of the Somali Patriotic Movement which controls the area around the southern port of Kismayo, have threatened in the past that they will attack UN troops who enter the territories they hold without their permission.

The prospect of shoot-outs between blue berets and marauding Somali gunmen, at least in the initial phase of the operation, is almost inevitable.

Such a situation will call for determined action rather than faint hearts and it is unclear if the UN has the political will to risk the loss of lives of blue berets in an African basketcase with no economic or geopolitical importance.

Furthermore, given that the numbers of troops will probably have to be increased significantly as the operation unfolds, the UN will have to make the decision about whether it is prepared to cover the extensive costs of such an operation.

Already estimates suggest that the first six months of the military operation will cost at least $130m.

Observers say that if that commitment is missing the UN intervention, on a short-term and limited basis, could cause more problems than it solves.

However, if the commitment is there, Somalia could prove the testing ground for a positive UN role in contributing to resolving the crises which are afflicting the continent.

Chinese student held on return

CHINESE police yesterday detained a former student activist who fled the country after the suppression of the pro-democracy movement in 1989, writes Yvonne Preston in Beijing.

Shen Tong, aged 24, returned to China four weeks ago, the first student protester to do so. He planned a news conference today to announce his intention to establish a Beijing branch of the Democracy for China Fund, an organisation he co-founded after fleeing to the US.

Its aim is to give political and material support to those seeking to build, non-violently, a democratic China.

Shen's arrest will not encourage Chinese students abroad to respond to Beijing's appeal to return or to believe its promise of no recriminations, though the appeal specifies they must withdraw from organisations opposed to the government and damaging to state security.

He was arrested in the early hours of this morning at his mother's house with two other Chinese, including Qian Liyun, whose husband is on Beijing's list of 21 most-wanted democracy campaigners, and two visiting French journalists. The journalists were expelled yesterday afternoon.

In a statement issued to journalists, Shen Tong said he had returned to "strengthen the bridge between those who were forced to flee and those who have carried on the struggle from within".

He said he had found China in "a state of confusion". There were few signs of political activity but "corruption, strikes, dissent, hunger, violence, and unbalanced development" were forming "storm clouds" far more than the outside world realised.

Calling for political change to match economic development, the statement said there were many forces of change fomenting below a seemingly calm surface. The vigour of south China existed in spite of, not because of, the politicians in the north.

NEWS: AMERICA

Brazilian lawyers and journalists accuse president of 'losing moral authority'

Collor impeachment process begins

By Christina Lamb in Brasilia

BRAZIL'S first impeachment process was set in motion yesterday with a formal petition to the president of Congress against President Fernando Collor, who has been linked to a multi-million-dollar corruption scandal.

The request was presented by the heads of the Brazilian Bar Association and Journalists' Association in an emotional ceremony in the Green Room of Congress. The room was packed with congressmen, union leaders and journalists. The 20-page document accused Mr Collor of "losing all moral authority to govern the country" and of "sullying the image of the state".

The impeachment request is the first formal step to ending Mr Collor's mandate and comes only half way through his five-year term. The president's determination not to resign means the country now faces weeks of political uncertainty and economic paralysis.

The charges against Mr Collor, elaborated in the request, include "lying to the nation" and receiving – along with his wife, ex-wife and mother – "huge quantities of money and goods of illicit origin", through a scheme of "phantom account holders and "trafficking of influence" by Mr Paulo Cesar Farias, his friend and former campaign treasurer.

The petition follows publication of a damning congressional report concluding a three-month probe into Mr Farias' activities.

This report was initiated after accusations against the president by Mr Collor's younger brother. It has provoked widespread demonstrations and declarations by business groups, unions, students and lawyers demanding Mr Collor's resignation or impeachment.

Few believe Mr Collor can survive the impeachment process and he is growing increasingly isolated in the battle to save his political career. His ministers have made clear in an official note that they are only staying on for the sake of the country.

Mr Collor's position worsened yesterday with the announcement that Mr Marco Maciel, leader of the government in the Senate, was quitting. Other members of the Liberal Front, Mr Collor's remaining supporters, were meeting last night to discuss withdrawing their backing.

A commission will now be set up by Mr Ibsen Pinheiro, the president of Congress, which will meet for 10 days to decide whether to accept the impeachment request. If accepted, it goes to the lower house where Mr Collor has 20 days to present a defence before a vote is taken. A two-thirds majority is needed for approval, at which stage Mr Collor would be suspended for 180 days while he is judged by the Senate. Mr Pinheiro expects the congressional vote to occur this month.

Economic weakness in US to continue

By Michael Prowse in Washington

THE US economy is likely to remain weak in the run-up to November's presidential election, another batch of disappointing figures indicated yesterday.

The Purchasing Managers' Index – a closely-watched gauge of conditions in manufacturing – fell to 53.7 per cent last month, against 54.2 per cent in July.

The official index of leading indicators rose only 0.1 per cent in July, a smaller increase than would be expected in a robust recovery. Construction spending, meanwhile, fell 0.6 per cent, its second consecutive monthly decline.

The Purchasing Managers' Index remains above the 50 per cent threshold that indicates an expanding manufacturing sector, but has failed to gain momentum since the spring and is no higher today than a year ago.

Mr Robert Bretz, a spokesman for purchasing managers, said the economy continued to grow last month but "lacked a strong upward momentum".

He said, however, that a component of the overall index measuring new orders had remained steady at 59.8 per cent, a relatively high reading. This suggested growth would continue in coming months.

The index of leading indicators pointed to a flat economy. Five of the 11 indicators – led by building permits – contributed positively while five dragged it lower. One indicator, the average work week, was statistically unchanged.

The small rise in the index failed to offset a 0.3 per cent decline in June, leaving doubts about the pace of growth in coming months.

Yesterday's indicators are the latest in a line of poor figures. This week the Commerce Department reported an unexpected 2.6 per cent decline in new home sales in July. This followed reports of falling consumer confidence and sales of durable goods in July.

Accountants link in challenge to US litigation

By Andrew Jack

THE six leading accountancy firms in the US have united in a campaign to change the liability system, to try to reduce their exposure to litigation.

The current US liability system is "out of control" and "seriously lacking in logic, fairness and balance", the firms say in a statement to partners and clients being circulated this week.

Their campaign reflects concern in the industry about the escalation in litigation, mainly against auditors to companies which have collapsed or been subject to sharp falls in their share prices.

The groups are launching an intensive lobbying campaign to persuade legislators in federal and local government to introduce a process of litigation which would assess claims against defendants in proportion to their degree of responsibility.

Under the existing system of "joint and several liability" every defendant is liable for up to 100 per cent of the value of a claim, no matter how limited its role. Accountants are often taken to court because they are perceived to have "deep pockets", according to the firms.

The campaign is an unusual collaboration between the so-called "big six" firms, the largest accountancy organisations by fee income and staff both in North America and around the world which compete fiercely against each other.

The firms – Arthur Andersen, Coopers & Lybrand, Deloitte & Touche, Ernst & Young, KPMG Peat Marwick and Price Waterhouse – are collaborating with the American Institute of Certified Public Accountants and other professional and trade bodies to bring about reform.

They also criticise the fact that there is no provision in the US legal system for the recovery of legal costs by defendants, regardless of the merit of the case brought against them. This encourages firms to settle cases rather than risk larger costs by fighting.

The statement says the total costs of settling and defending lawsuits among the six groups was $477m (£239.6m) last year, representing 9 per cent of auditing and accounting revenues, up from 7.7 per cent in 1990.

It says the cost of litigation is a serious threat to the financial reporting system, the strength of US capital markets and the competitiveness of the economy. It estimates that there are now about 4,000 outstanding lawsuits facing the US accountancy profession as a whole, with a value of $30bn in claims.

A survey among the six groups last year showed the average claim was for $85m, the average settlement was $2.7m and the average legal cost per claim $3.5m.

The larger firms complain that their insurance premiums are far higher than for smaller counterparts, with sharp reductions in policy limits and a rapid increase in deductibles to more than $25m.

Veto hits California budget deal

CALIFORNIA'S Governor Pete Wilson vetoed a key bill yesterday, threatening to unravel a compromise budget aimed at ending the state's worst financial crisis since the Great Depression, Reuter reports from Sacramento.

The Republican governor, who had strong-armed legislators into accepting most of his demands in a $57bn (£28.6bn) austerity budget, contended the education bill could result in a $1.9bn deficit.

The Democratic-controlled legislature had passed the measure needed to complete the budget package and wipe out a $10.7bn deficit.

Mr Wilson's veto did not immediately sink the budget plan, but he has vowed not to sign the overall spending package until enabling legislation has been passed.

After weeks of haggling the governor and the legislature have come to terms on other deep spending cuts – $1.7bn from health and welfare programmes and $1.3bn from aid to local governments.

California has been without a budget since July 1, when the legislature failed to pass a new spending package on time and the richest US state ran out of money.

Republicans urge suspension of Nicaraguan aid

By Damian Fraser in Mexico City

NICARAGUA'S hopes of receiving more than $100m (£50.2m) of promised aid from Washington have been dealt a blow after a report by the Republican staff on the US Senate foreign relations committee called for an indefinite suspension of all US help.

The report on Monday charged that the government of President Violeta Chamorro is controlled by the left-wing Sandinistas, maintains the largest army in Central America, has fraudulently channelled money and aid to its friends, and has failed to return land to US citizens that had been illegally confiscated.

Mr Antonio Lacayo, the president's son-in-law and minister of the presidency, described the report as "false and full of slanders". But the US State Department yesterday called the report "far-reaching and disturbing" and is sending a delegation to Nicaragua to take up the issues raised.

Ms Deborah De Moss, who wrote the report, said it was almost certain Nicaragua would not receive the money this year, and that its findings had received support from both Republicans and Democrats in Congress.

The $116m of aid has been on hold since the end of May after Mr Jesse Helms, the right-wing US senator, protested at the continued influence of the Sandinistas in Mrs Chamorro's government and the failure of the government to return land to the US citizens.

The aid is critical to Nicaragua's economic stabilisation programme. Were it to be suspended indefinitely the government would have to slash spending to keep to IMF targets – an almost impossible task given the budget cuts it has already made. If it missed IMF targets, further multilateral aid might be put on hold.

The US administration has agreed Nicaragua will be given $50m to meet IMF financial commitments if the government removes Sandinista commanders from the police force and draws up a strict timetable to reform the army and return land to US citizens. The remaining $66m, Ms De Moss said, should only be issued when all land was returned to the 465 US claimants.

President Violeta Chamorro: Republican report claims continued Sandinista influence in her government

Medellín blast kills 9

NINE people were killed yesterday when a 25kg bomb hidden in a milk churn exploded outside a house in Medellín, base of a powerful cocaine cartel, police said, Reuter reports from Medellín.

The bomb exploded in the working-class suburb of Belalcazar in Colombia's second-largest city, killing three women, two men and four children, police said. At least seven people were injured and five houses and 14 vehicles were badly damaged.

It was the most serious attack in Medellín in 18 months and the second bombing there since Pablo Escobar, the cocaine cartel chief, escaped from jail on July 23.

NEWS: WORLD TRADE

EC, US agree to seek end of oilseeds row

By David Gardner in Brussels

SENIOR EC and US trade officials agreed yesterday to try for a solution to their long-running dispute over oilseeds subsidies by the end of this month. The move confirmed the truce they agreed at the end of July is still holding, and raises hopes both sides still have their eye on the greater stakes of an end to the Uruguay Round world trade talks under the aegis of Gatt.

Washington is delaying a hit list of $1bn (£502m) in EC food and drink exports which would bear punitive tariffs under US trade law. But the EC would almost certainly retaliate if it felt the US were acting outside multilateral accords, with the risk the worsening row could scupper the Uruguay Round.

The oilseeds dispute began in a 1990 Gatt ruling finding that the EC discriminated against US oilseed exporters, who were guaranteed duty-free access to the Community during the 1962 Kennedy Round of Gatt talks. The EC amended its regime in August last year, in line with the reforms to its Common Agricultural Policy finally pushed through in May.

In April, a reconvened Gatt panel rejected the EC changes as insufficient. Brussels insists the panel exceeded its brief by basing its judgment on the "final act" of the Uruguay Round published last December, which as yet has no agreed status, aspects of which the EC is seeking to negotiate.

The EC responded to one of two options suggested by the April ruling, offering to negotiate compensation for the US. Washington and the US soyabean lobby say this does not address damage to soya producers.

Brussels says the EC is acting within Gatt dispute rules, while refusing to change its oilseed subsidy regime. "If no deal comes by the end of September," one said, "that doesn't mean the US is entitled to retaliate unilaterally." The EC hopes to settle the matter at a Gatt council meeting on September 29.

The question is whether Gatt and the US will accept that the EC's farm reform, which switches emphasis from price support to direct income payments to farmers who must take land out of production to win compensation, will restrain EC output of all farm produce including oilseeds.

Brussels says it will, and these payments should be allowable in a final Uruguay Round deal, where it is hoped to include a definitive oilseeds settlement.

Taiwan acts on liquor

By Luisetta Mudie in Taipei

TAIWAN yesterday liberalised its import regime on brandy, vodka, gin and other spirits, allowing the private sector to import liquor – previously a government monopoly.

The move came into force the day after Baroness Thatcher, former UK prime minister, called in Taipei on the Taiwan government to scrap remaining trade barriers. UK and French trade officials have complained to Taipei of discriminatory taxes on Scotch and Irish whiskies and French armagnac and cognac.

As the private guest of Citibank and a Taiwan newspaper, Baroness Thatcher said: "You now have an obligation to open your markets to the goods and services of others, and get rid of restrictions of all sorts."

Taiwan let private companies import whisky in April last year, when whisky sales topped $200m. Scotch and Irish whiskies are subject to a monopoly sales tax of $17 a litre; "other whiskies", mainly US, are taxed at $8. French armagnacs and cognacs are taxed twice as much as other brandies, at $40 per litre. Officials say higher taxes are levied on EC liquor for its quality and matching price. So far, private imports of spirits have been limited to the US and EC.

Gulf Air in $600m Airbus order

By Daniel Green

AIRBUS Industrie strengthened its grip on the Middle Eastern aircraft market yesterday with an order worth almost $600m (£301.5m) from Gulf Air.

Gulf Air, jointly owned by Oman, Qatar, Bahrain and Abu Dhabi, is buying six Airbus A340s, the biggest aircraft in the Airbus range, and taking options on another six.

Gulf Air will be the first Middle East carrier to operate the A340 when it receives the first in spring 1994. Each aircraft will be powered by four engines made by CFM International, a venture between General Electric of the US and Snecma of France.

The purchase is in addition to plans by Gulf Air to invest $1.7bn over the next three years in 18 new aircraft, flights to 10 new destinations and more facilities and personnel. Gulf Air is a long-established customer of Airbus. It has ordered 12 Airbus A320s, a smaller model, two of which are in service on routes within the Gulf.

The order is a boost for Airbus after Emirates, another expansion-minded Middle Eastern airline, decided to buy Boeing's new model, the 777. The A340 is a new model set to enter service with Lufthansa early next year.

● Three of the world's automated airline ticket reservation systems are linking their computers. The tie-up is between Amadeus, owned by Air France, Lufthansa and Iberia; Worldspan, owned by TWA and Delta of the US, and Abacus, owned by five Asian airlines. Worldspan and Abacus also have stakes in each other.

The link will allow travellers who arranged itineraries on one network to change their plans through a travel agent which subscribes to one of the other two. The arrangement goes some way to improving the competitive positions of Amadeus, Worldspan and Abacus against the two world leaders, Sabre, owned by America Airlines, and Galileo/Apollo, owned by 11 airlines in the US and Europe.

Japan pressed on tariffs

By Robert Thomson in Tokyo

JAPAN was urged yesterday by Mr Arthur Dunkel, Gatt director-general, to accept tariffication (recalculating subsidies as tariffs) without exception, a reference to Tokyo's refusal to make a concession on rice imports.

While Mr Dunkel encouraged Tokyo to work for a successful end to the Uruguay Round of world trade talks, Japanese officials said they were concerned about possible trade barriers raised by the North American Free Trade Agreement (Nafta), linking the US, Canada and Mexico.

Mr Dunkel told Mr Kozo Watanabe, Japan's international trade and industry minister (both pictured right), that Gatt may review Nafta under the regular review mechanism.

Japanese officials would like a special inquiry to clarify if Nafta is "trade-creating" or not. Japan has cited the recent dispute with the US over the local content of Hondas produced in Canada as an example of potential pitfalls of the Nafta accord, and would like Gatt confirmation of Nafta regulations.

Japan's ruling Liberal Democratic Party (LDP) was relieved that delays in Uruguay Round negotiations let Japan keep its rice import ban; the party feared a concession would have hurt it in an upper house election in July.

The LDP won the election easily, but the Tokyo government has not moved to allow rice imports; Mr Dunkel's assurances that tariffication is "not liberalisation in the true sense" are unlikely to prompt a sudden policy change. He leaves for Seoul today.

US set for showdown with China

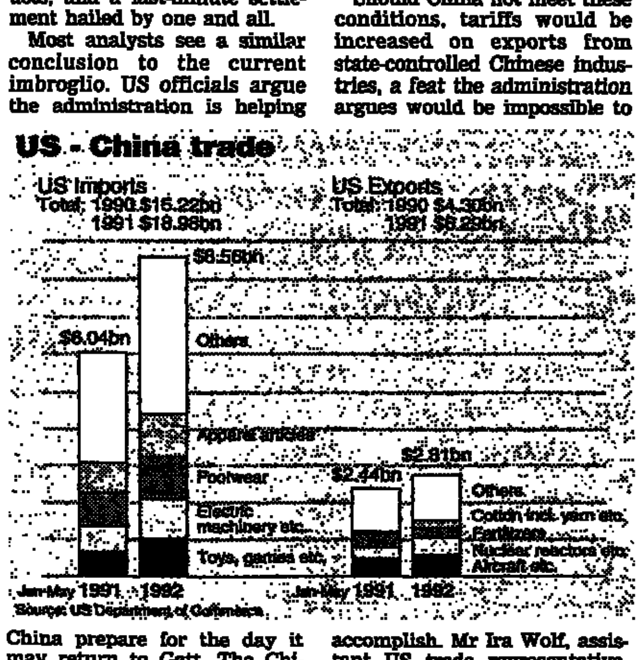
Nancy Dunne and Laurie Morse on a lunge at Beijing's trade wall

THE BUSH administration is girding for a high-stakes showdown of "constructive engagement" in an attempt to force China to remove its import barriers. If successful, China will promise to publish its rules, laws and regulations and agree to end product bans and quotas, import licensing and technical barriers to trade, such as phytosanitary (health and safety) standards, which present illegitimate impediments.

Success would also mean critics of Beijing will have lost an excuse for attacking the growing US trade deficit with China, which is heading for over $15bn (£7.5bn) this year, and probably precipitate another collapse of the drive in Congress to place conditions on China's Most Favoured Nation (MFN) status. Failure will mean President Bush will have to lose face or impose billions of dollars in sanctions against the country for which he claims a special affinity, having been the first US envoy there in the 1970s.

The deadline is October 10, one year from the day the US formally filed a Section 301 complaint against China for denial of market access. In preparation, the US has released a list of products, worth $3.9bn, which could be targeted for 100 per cent tariffs. Similar threats of retaliation, stemming from China's failure to protect patents, softwear, trademarks and other intellectual property from pirates, produced an agreement in January. But the whole exercise had to be endured: deadlines, threats, a list of potential sanctions, pleas by importers to keep sanctions off their products, and a last-minute settlement hailed by one and all.

Most analysts see a similar conclusion to the current imbroglio. US officials argue the administration is helping



China prepare for the day it may return to Gatt. The Chinese know a breakdown in talks could embolden congressmen to step up their criticism of China's MFN status. The Senate soon will vote on legislation, passed by the House of Representatives, which would require the president to accompany his yearly extension of China's MFN status by a report showing progress on human rights. China would be required every year to free more political prisoners, stop exporting "slave labour" goods and abide by treaties governing export of missile technology and nuclear materials.

Should China not meet these conditions, tariffs would be increased on exports from state-controlled Chinese industries, a feat the administration argues would be impossible to accomplish. Mr Ira Wolf, assistant US trade representative, told the Senate Finance Committee last month: "Targeting exports of state enterprises, while appealing in theory, is unworkable in practice". Suggestions have been made that failure to obtain a new accord and subsequent sanctions would spur China to hit back through its US wheat purchases.

Beijing has been notably absent from the wheat market since November, 1991, leaving a gaping hole in the US export picture. China is the second largest US wheat customer; the former Soviet Union is the first, and it can now only buy when the US agriculture department extends credit. But China continues to receive regular shipments of US wheat, which it bought in a few large purchases last autumn. Wheat traders are confident China will return as a buyer once it has assessed the size of its own crop and is convinced US wheat prices have fallen to their harvest lows.

China can use its wheat imports as a trump card. In the 1980s, it abstained from the US wheat market until the US agreed to keep China's textiles exports flowing. The longer it waits, the lower US prices will drift. But China was successful in playing its wheat card before the Tiananmen Square incident, and before most in the US Congress became convinced trade sanctions should be used over its human rights violations. That was also before the Soviet Union collapsed, when China seemed the more benign communist superpower. The current climate might give Congress more resolve in a trade stand-off.

Failure by Beijing to buy wheat before the November elections could hurt Mr Bush in the US farm belt. But the Chinese would be more likely to time a purchase to help him: despite his recent stand against Beijing, he has been an ally for years. Mr Bush's opponent in the presidential election campaign, Mr Bill Clinton, threatens a tougher human rights line.

Plan for maritime aircraft

By David White

SIX EUROPEAN aircraft makers have grouped to produce a maritime patrol aircraft. The initiative comes from Dassault Aviation of France and British Aerospace, with Deutsche Aerospace of Germany, Construcciones Aeronauticas (CASA) of Spain, Alenia of Italy and Fokker of the Netherlands.

Through a new "industrial group", Europatrol, they plan to seek government agreement on a common aircraft and mission system for use throughout Europe; they hope the aircraft will be exported worldwide and the new mission system be suitable for updating current aircraft.

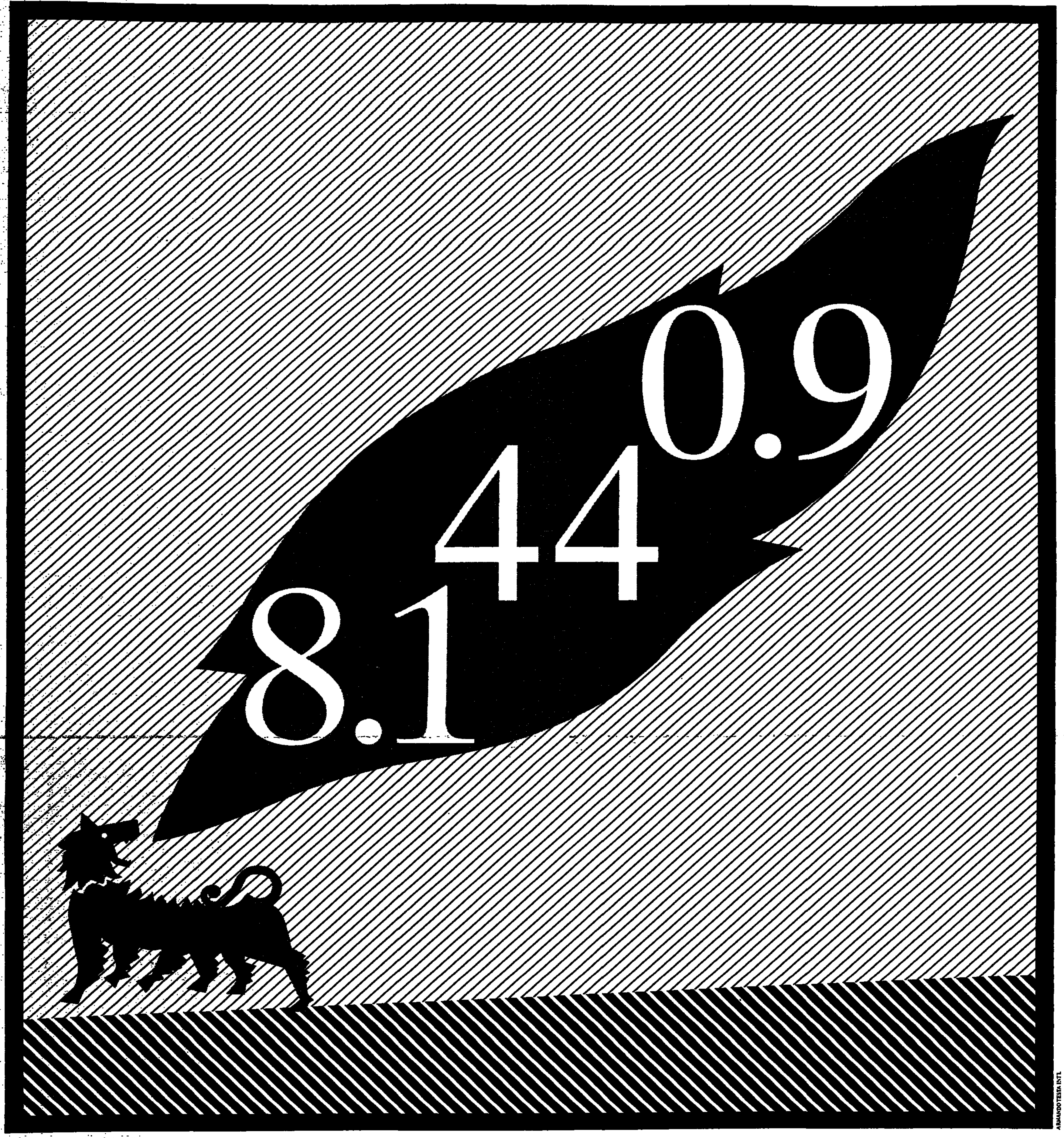
France has been pressing for a joint maritime patrol project through the Independent European Programme Group (IEPG), made up of Nato members. The companies will lobby governments to set up an outline IEPG "staff target" for the aircraft. The UK has been considering Dassault's Atlantique 2 as an option to replace its ageing Nimrod patrol aircraft.

Correction

Taylor Binnie

The World Trade page of August 21 incorrectly referred to Binnie & Partners as part of the construction group Acer. Binnie is an independent consulting firm; Taylor Binnie is a joint venture between it and Acer to carry out work in Istanbul.

When our six-legged dog talks numbers, it's talking billions of dollars.



ARMANDO TESTA INT.

Take a quick glance at some of the figures of the Eni Group in 1991.
Revenue: 44 billion dollars.
Net capital: 35.9 billion dollars.
Gross operating profit: 8.2 billion dollars.
Cash-flow: 5.9 billion dollars.
Investments: 8.1 billion dollars in 1991.
Net profits: 0.962 billion dollars in 1991.

These figures make the six-legged dog one of the leading industrial Groups throughout Europe and the world. A strong and prestigious position that the Eni Group has built up over the years, thanks to the contribution of its 400 plus subsidiaries operating in more than 70 countries.

With about 25,000 employees working outside Italy, the Eni Group is planning for the future: for the period from 1992-1995 alone, the Group will be investing 38 billion dollars.

You can be sure the Eni Group will never lack energy.

Eni
A global energy enterprise.

Agip, AgipPetroli, Snam: energy. **EniChem:** chemicals. **Enirisorse:** metallurgy and non-oil activities. **Nuovo Pignone, Snamprogetti, Saipem:** machinery manufacturing, engineering and services. **Savio:** textile machinery. **Terfin:** miscellaneous activities. **Sofid, Eni Int. Holding B.V.:** finance. **Eniricerche:** scientific research.

Banks under scrutiny over charge plans

By David Barchard and Alison Smith

CONSUMERS organisations and opposition politicians at Westminster yesterday expressed alarm at the possible introduction of new current account charges by the four main clearing banks and warned of serious consequences if they acted in concert to make customers pay more.

None of the clearers would admit to having plans to end free-if-in-credit banking in the near future, but all the "Big Four" banks admitted that they were reviewing the situation.

Smaller banks indicated that they were less likely to introduce new current account fees than the larger clearers.

At Westminster, the opposition Labour party yesterday stepped up the political pressure on the banks not to raise charges in concert – and on the government to intervene if they tried to do so – with a letter to Mr Norman Lamont, the chancellor of the exchequer, calling for an in-depth inquiry into banks' costs, charges and services.

Mr Gordon Brown, Labour's "shadow" chancellor, argued that there is a strong case for a statutory code of practice instead of reliance on self-regulation.

The National Consumer Council said that it would be disappointed and surprised if the banks decided to re-introduce account charges for customers in credit.

The Office of Fair Trading, which last year accused the high street banks of being high handed and insensitive, said it would be watching carefully to see whether the banks act in concert when introducing charges.

● Labour will tomorrow launch its autumn campaigning with a commitment to an emergency programme of measures to help revive the economy.

The central elements to Labour's recovery programme are measures to reduce unemployment, to encourage investment in the domestic economy and to boost the housing market; together with co-ordinated action within the European Community to consider employment and fiscal measures and concerted pressure on the Bundesbank to signal an interest rate cut.

Mr Gordon Brown said there was growing recognition within Germany of the need for lower interest rates in the light of the increased sluggishness of the German economy. He said that the meeting of EC finance ministers in Bath on Friday should consider the German case for revaluation.

Pressure grows on Willis to quit early

By David Goodhart, Labour Editor

MR NORMAN Willis, the general secretary of the Trades Union Congress, is under strong pressure to clarify his future on the eve of this year's annual TUC Congress in Blackpool.

Mr Willis, who today hosts the traditional pre-TUC press conference, has so far made no response to growing speculation that he will announce his early retirement today or, more likely, at the TUC General Council meeting tomorrow.

Colleagues of Mr Willis say he has privately indicated his intention not to carry on until he is 65, in another five and a half years, but has never spelt out how early he might retire. The TUC is the umbrella body for most UK unions.

Speculation about Mr Willis's future is an annual pre-TUC event, but the doubts about his future are widely believed to be more serious than ever this year.

The pressure is stronger now, partly because last year's pre-general election reluctance to rock the boat has disappeared. More importantly Mr Willis can no longer count on the backing of the TGWU general union – in the past Mr Ron Todd, the former TGWU leader, prevented any move against Mr Willis but Mr Bill Morris, the new leader, feels no such loyalty to the TUC general secretary.


Under pressure: Norman Willis contemplates his future

Several senior union leaders say that if Mr Willis does not announce that he is going to go either in January, when he is 60, or at next year's Congress, they will force him out.

It had been thought that one of the most serious obstacles to persuading Mr Willis to leave voluntarily was his commitment to the European Trades Union Congress where he has served a of a four year presidency. Some TUC officials are now suggesting that it would be possible for Mr Willis to continue in office at the TUC for a year or two after leaving his TUC job.

Britain in brief

Double dip forecast for property

THE stalled UK recovery threatens to produce a "double dip" recession in the commercial property market, according to a leading research group studying demand for office and factory space.

The Investment Property Databank (IPD), an independent research group, says the slow recovery in investment returns, which began last year, has run out of steam. It blames the accelerating decline in rental values.

IPD, which analyses institutional property portfolios worth £40bn, said the slide in rental values – largely confined to London and the South East until the start of this year – has now spread to northern England and Scotland. Industrial property, which performed relatively well before 1992, suffered a particularly sharp fall in rental values.

The IPD review shows annualised total returns (which measure both yields and rental movements) have slipped back from 3.6 per cent at the start of 1992 to 1.4 per cent in June and could go negative in the second half of the year.

Maxwell case adjourned

The prosecution of Mr Kevin Maxwell, his brother Ian and their colleague Mr Larry Trachtenberg on charges of conspiracy to defraud and theft involving £135m has been adjourned until December 1 by City of London magistrates.

None of the three men was present at the 1½-hour hearing at which Mr Paul Garlick, for the Serious Fraud Office, said it was hoped that the case would be ready for transfer to the crown court in the early part of next year.

All were remanded on conditional bail. Mr Kevin Maxwell faces six charges of theft and two of conspiracy to defraud, Mr Ian Maxwell one charge of conspiracy to defraud and Mr Trachtenberg two counts of conspiracy to defraud and four of theft.

Ulster talks in Belfast

Round-table talks on the political future of Northern Ireland resume in Belfast today after a 40-day recess, entering what the participants believe to be the most crucial stage of the three-strand talks process which got underway last April.

The hoped-for culmination of the process is an agreed formula for self-rule in Northern Ireland, to replace the 1985 Hillsborough Agreement.

A month has been set aside for this round of talks. Representatives from the four main political parties in the province as well as the British and Irish governments will be present and the meetings will be chaired by Sir Ninian Stephen, the former governor-general of Australia.

Nursing reforms defended

The government said evidence of newly qualified nurses looking for jobs overseas showed the success of health service reforms in retaining their older colleagues.

Mrs Virginia Bottomley, health secretary, was responding to an Institute of Manpower Services report which said nearly one in five nurses, including many specialists, were considering leaving their jobs to work overseas.

The study warned that the shortage of skilled nurses could become worse as a high proportion of those considering emigrating worked in specialities including coronary care, surgery, paediatrics and accident and emergency.

Mrs Bottomley (above) said there were fewer openings for new nurses because more senior staff were staying with the health service on average twice as long as they did 10 years ago.

Powergen seeks cut in levy

Powergen, the privatised generator, has joined some of the UK's biggest companies in appealing to the government for their electricity prices to be cut, by reducing the 11 per cent "nuclear levy" on bills to large users.

Large energy consumers have intensified their warnings in recent weeks that without lower electricity prices they will not be able to compete with overseas companies.

PowerGen said that it has been discussing one possible solution to the problem - the removal of the nuclear levy, the subsidy all electricity users pay to the state-owned generator Nuclear Electric with large consumers and the Department of Trade and Industry since before the general election in April.

House prices fall by 0.2%

House prices fell by 0.2 per cent in July according to figures published yesterday by Nationwide.

Nationwide's chief executive said concern about the state of economy was continuing depress the market despite the fact that the average house prices compared with average annual earnings had fallen to their lowest level for 20 years. According to the Nationwide the average price of a home in July was £55,328.

Accountants disciplined

Three firms of chartered accountants have been disciplined for breaches of investment business regulations in the latest rulings from the Institute of Chartered Accountants in England and Wales.

Green audits criticised

Less than half of the companies mentioning environmental issues in their annual reports are providing information of much value, according to Company Reporting, the Edinburgh-based monthly monitoring service.

Twenty-three per cent of a sample of 570 companies' latest reports address environmental matters, compared with 10 per cent when the topic was analysed in a previous survey in July last year. But 12 per cent of the sample contained statements which are "usually vague or meaningless, lacking any real information content", Company Reporting says.

Forecast of forecasts

The economy will contract 0.6 per cent this year, according to the latest compilation of private-sector forecasts drawn up by the Treasury. The consensus forecast for 1993 is for growth of 1.6 per cent. The forecasts are gloomier than the comparable compilation of a month ago, which said output would fall 0.2 per cent this year and increase 2.0 per cent next year.

Japanese flock to Scotland

Japanese tourists visiting Scotland spend twice as much as American tourists and are flocking to Scotland in increasing numbers, said the Scottish Tourist Board. Last year 33,000 Japanese tourists visited Scotland, twice as many as in 1987, and they spent £15m.

AJ Archer to acquire rival Lloyd's agency

By Richard Lapper

AJ ARCHER Holdings, the Lloyd's agency group listed on the stock exchange, yesterday announced plans to continue its expansion by acquiring a rival agency, Kellet Holdings.

Mr Brian Kellett, owner of Kellett Holdings, will be chief executive of the new group. Mr Kellett is a non-marine underwriter and a a member of the Lloyd's council, the insurance market's governing body.

Last month Archer bought another Lloyd's agency, Cuthbert Heath. The move signals further rationalisation at Lloyd's as businesses seek to cut costs and improve efficiency in the wake of their worst ever trading losses.

Pre-tax losses for 1989, which were announced in June in line with the three year accounting system used at Lloyd's, totalled £2.06bn. Chatset, the research company which monitors Lloyd's, forecast last week that losses for 1990 will amount to £1.5bn.

The combined capacity (the capital base) of the syndicates managed by Archer totals £573m, making the agency one of the biggest in the market.

"The consolidation of Lloyd's agencies into larger and more economic units will enable us to take advantage of the improving market conditions," said Mr Kellett, referring to the recent rise in premium rates at Lloyd's.

Archer members' agencies will handle the affairs of 663 Names, the individuals whose assets support underwriting.

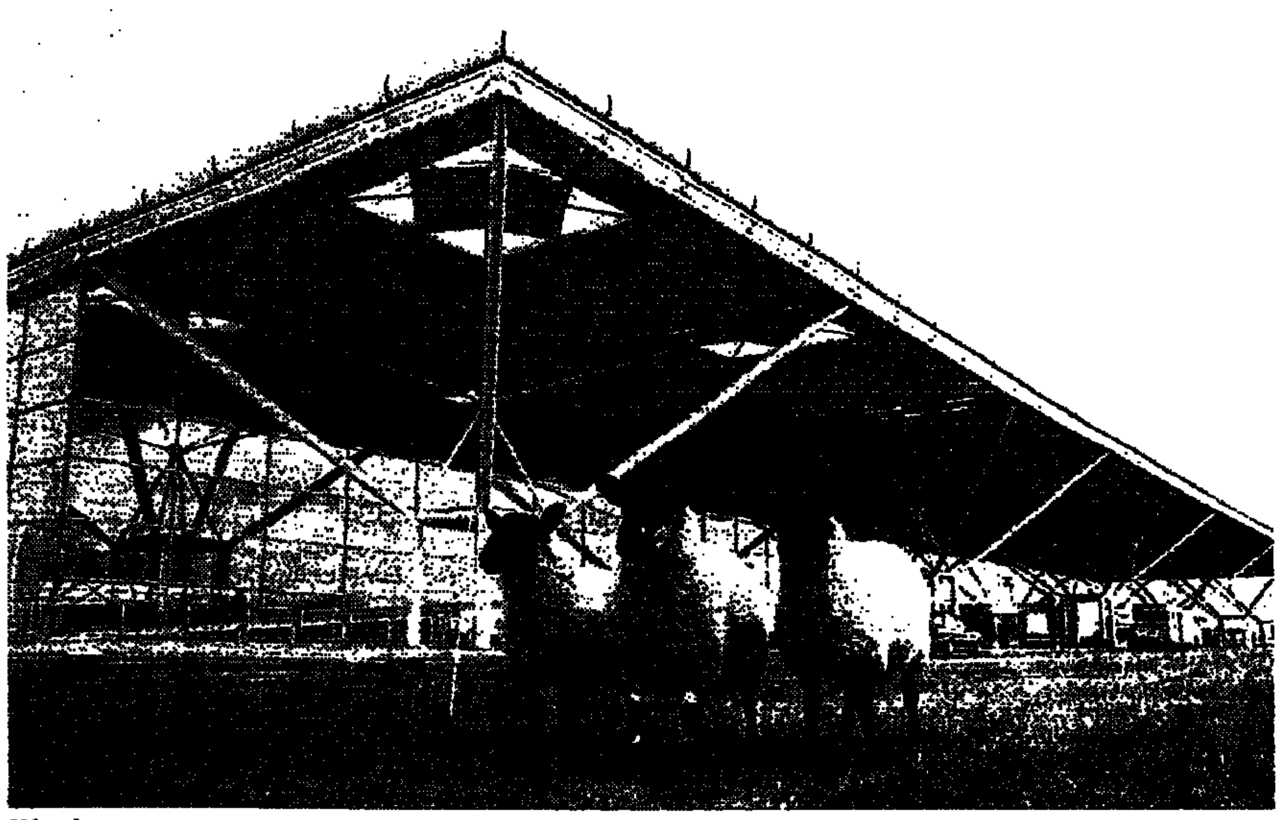
Mr Richard Maylam, chairman of Archer, said he had been looking at potential acquisition targets since last year. But following the market's recent difficulties agencies "are much more willing to become part of a larger group."

Kellett shareholders will receive 2.25m paid up Archer shares and a deferred cash consideration payable in future years as well as profit commissions received by Archer from the Kellett businesses.

In a separate development, Sedgwick Lloyd's Underwriting Agents, the members agency subsidiary of Sedgwick Group, announced it is to introduce a scheme to help the Names spread their underwriting risks more widely.

Names participating in the Sedgwick Standard Programme would participate in 41 syndicates, around three times as many syndicates as those trading at Lloyd's through conventional methods.

Mr Julian Crispin, the chairman of the agency, said: "The programme should help Names avoid peaks and troughs in their underwriting."



Old and new: grass around London's Stansted Airport, home to the space-age terminal designed by Sir Norman Foster, is to be cut by the medieval method. A herd of 75 Suffolk cross sheep has been introduced to the perimeter to protect the local environment.

Charterail in moves to stave off collapse

By Richard Tomkins, Transport Correspondent

CHARTERAIL, the pioneering railfreight company which last week announced that it was calling in the liquidators, yesterday did an about-turn and renewed last ditch efforts to stave off its collapse.

Mr Robin Gisby, managing director, said the surprise move followed a weekend during which a range of potential shareholders had expressed interest in plugging the company's funding gap in return for equity stakes.

Charterail announced that it was going into liquidation last Thursday after British Rail, which owns 22 per cent of the company, declined to cut its haulage rates or invest more money into the business to ease its financial difficulties.

The moves will prompt speculation that ministers have intervened to save Charterail by putting pressure on BR to offer the company more favourable rates.

Charterail's near collapse has come as an embarrassment for the government because the company has been held up by ministers as an example of how freight can be switched from road to rail.

However, the government said there had been no pressure from ministers on either BR or Charterail to resume talks. Charterail said it had no discussions with the department since early last week.

Trial clears way for release of report on Manx bank

TWO former senior executives of the Savings and Investment Bank, the Manx bank which collapsed in 1982 owing £42m, were among five men who appeared for sentencing yesterday for conspiracy to defraud shareholders and creditors of a company in fraudulent land deals.

Mr Robert Killin, the former managing director of the SIB, and his general manager Mr John Cunningham, benefited from one of the deals, Manchester Crown Court heard during a nine-week trial.

Mr Killin and Mr Cunningham, were involved in one deal in which they set up a "dummy" company in the Isle of Man, buying the land with the SIB's money.

Mr David Knott, managing director of Pennine Commercial Holdings Limited, admitted conspiracy in August 1989. He was jailed for six months with the balance of a two-year term suspended.

Judge Robert Hardy said yesterday Mr Knott was "the principal in this wholly unhappy affair".

Mr Cunningham was given a 12 month jail sentence. Mr Killin will be sentenced at a later date.

The end of the trial means a Manx government probe into the bank's collapse – the Chadwick Report – can now be published. It was delayed because of the Manchester trial.

Two years ago the Manx attorney-general and police were criticised for failing to take appropriate action after the bank collapsed.

In his report on the public inquiry into the Manx government's conduct in the affair, Mr Anthony May, QC, said there was "a lack of controlling strategy by the attorney-general and a lack of action by the police".

He said activity generated in June 1983 by the report from inspectors appointed by the Manx High Court had simply petered out, with no decision either to curtail or pursue police investigations. Criminal proceedings against eight former directors, officials and agents of the bank were not brought until March two years ago. The trial was abandoned when the judge ruled that there had been unreasonable delay in bringing charges, which had resulted in prejudice to the defendants.

The Manx government commissioned Mr May to conduct an inquiry to establish whether steps taken following the bank's collapse were "adequate and timely".

Average pay for top chairmen £398,667

By Norma Cohen, Investments Correspondent

BRITAIN'S largest companies have been somewhat more modest in awarding pay rises to their chairmen in 1991 than in previous years, according to data from Pensions Investment Research Consultants, a private research service.

PIRC, reviewing the salaries of the highest paid director at the FTSE-100 companies, found average pay rose two per cent. Average pay in 1991 was £398,667.

UK companies are not required to disclose the remuneration package of their chairman but must do so for their highest paid director.

The survey, which included 94 of the FTSE-100 companies, found 39 remunerated their highest paid director above average in 1991. Britain's highest paid director, from among those companies, is Lord Hanson, chairman of Hanson Group. Second is Mr Bob Bauman of SmithKline Beecham.

PIRC noted that the aggregate figures highlight some of the intricacies associated with detailing chairman's remuneration packages. For instance, the remuneration package of Sir Ian MacLaurin, chairman of Tesco, fell by nearly 27 per cent to £1,084,000.

Among the lowest paid directors at Britain's largest companies are chairmen of former nationalised water companies. Anglian Water's highest paid director earned £107,000, the lowest of any in the FTSE-100.

Luxury car output hit by recession

By Kevin Done, Motor Industry Correspondent

PRODUCTION by loss-making specialist car makers fell sharply in the first half of 1992 under the impact of the recession in Britain and in overseas markets.

Output by Rolls-Royce Motor Cars, a subsidiary of Vickers, was 43 per cent lower than in the corresponding period a year ago at 618, while production by Jaguar, a subsidiary of Ford of the US, dropped 25.3 per cent to 10,260.

Group Lotus, a subsidiary of General Motors of the US, suffered a 68 per cent fall in output to 505 from 1,559 in the first half of last year, while Aston Martin, the luxury sports car maker which is 75 per cent owned by Ford, produced only 23 cars in the first half of the year compared with 121 a year earlier.

Jaguar, Aston Martin and Lotus have all announced a new round of redundancies in recent weeks, while Lotus has also been forced to stop output of its main product range, the loss-making Elan sports car.

TVR, the privately-owned sports car maker based in Blackpool, was the only specialist producer to buck the trend with a 9.1 per cent increase in production to 420.

According to figures released by the Society of Motor Manufacturers and Traders overall car output in the first half of the year declined by 1.1 per cent to 686,747.

Nissan provided the main boost to UK volume car output with an 18 per cent increase to 74,314. Production is also being supported by the first year's output of the Opel/Vauxhall Frontera, a four-wheel drive leisure/utility vehicle produced by IBC Vehicles, the General Motors/Isuzu joint venture.

Nissan production is likely to rise in the second half of 1992, as it adds a second model range, while both Honda and Toyota are due to start their first car production in the UK by the end of the year.

Nicholas Lander looks at a project which employs mentally handicapped people

Bouquets in a French vineyard

Château de Lastours, a wine property which employs only the mentally handicapped, sprawls over crags above the motorway that joins the South of France to Spain.

Since Lastours first released wine in 1977 it has won on average 12 prizes every year.

It exports all over the world – Belgium, Switzerland, Japan and Germany – with the UK the biggest market. It has insisted on quality, and then used this as a management tool to instil pride in its workforce.

The windswept piece of land was bought for a mere FFr600,000 (£63,000) in 1970 by the *Comité Centrale d'Enterprise* of a Marseille bank, Société Marseillaise de Crédit, and established as a *Centre d'Aide par le Travail.*

Comités centrales were established by Charles de Gaulle in 1945 to encourage companies to set up organisations to look after the welfare of their staff.

The Marseille bank doubled the amount available for investment and specified it should be for the mentally handicapped.

The scheme appealed to Jean-Marie Ligneres, hired as a newly-qualified oenologist in 1970, who has been managing director of Lastours since 1977.

He recognised that he would have to supply the mentally handicapped workforce not just with an occupation but work that would produce recognised results. That way, he felt, their handicap could be lessened.

The rebuilding of Lastours took seven years and the first vines were planted in 1973. Fifty hectares of stones were cleared by outside contractors.

A village of small apartments, including married quarters, was built for the workers; there are tennis courts, rugby and football pitches and a swimming pool and all the buildings necessary for the making and ageing of the wine. The total investment by 1980 was FFr50m.

Today, Lastours exudes the bustle, as well as the commitment, of a kibbutz. Visitors are continually drawn by new exhibitions and concerts as well as wine.

During the 1970's a big management decision was taken. As work on the vineyard neared completion, Ligneres realised that there would be a need for someone with specific psychological expertise at the top. Aware that two "chiefs" might lead to conflict, Ligneres enrolled as a psychology student, first at Montpellier then Toulouse.

His doctoral thesis awarded in 1983 stressed that the mentally handicapped must be offered the possibility of being involved in the whole work process rather than repetitive, bitty jobs which allow them neither contact with the finished product nor bring recognition and dignity.

From the beginning Lastours has concentrated on red wines rather than white because red wine making offers more processes for the whole team to be involved in. Red wine takes two years to make compared with nine months for white wine and it also offers the possibility of ageing and cellar work which most white wines do not.

Ligneres has involved all his staff in every process from the back-breaking pruning of the vines to the more sociable manning of wine stands in France and abroad.

Limited to a workforce of 60, of whom a third are women, Lastours is inundated with applications for places. The working week is 40 hours of which five are stipulated compulsory recreational time, and the pay is about FFr1,800 per month plus board and lodging.

Lastours exudes the bustle, as well as the commitment, of a kibbutz

Recruiting good management has been the toughest challenge. The reputation of Lastours has attracted more than sufficient applicants, although Ligneres occasionally wishes for the fresh ideas that a higher staff turnover might bring. He manages with a team of 40, including ancillary workers, 12 specialist teachers, a psychiatrist who visits for three hours a week and a psychologist for six hours a week.

As a financial organisation, Lastours is in an unusual position because it pays no interest to its bank.

Last year it generated a turnover of more than FFr50m and although it has been in profit since 1990, it stresses that all profits are and will be reinvested.

This somewhat artificial financial environment can make its competitors jealous – particularly when in 1987 Lastours declassified a lesser vintage to maintain its reputation.

Although commercial considerations are important, they are secondary at Lastours. Growth has consistently been 40-50 per cent a year but the company has to ensure that the wine's success does not put too much pressure on the workforce.

Thanks for the memory

HEALTH CHECK

Modern managers are always complaining of memory loss. They say they cannot remember conversations, dates, names and appointments. Help is at hand: in the vast majority of cases, mild memory lapses can be corrected.

Judging by the growing weight of literature on the subject, there is no single memory system, but multiple systems with different functions. Memory functions can be divided into two: declarative (or explicit), in which we learn and remember with awareness, and non-declarative (or implicit) in which we learn without being aware of the process of information storage and retrieval. This process is a delicate one, and can be affected by your life-style.

Memory failures are often due as much to a failure to acquire and store information, as to disruptions in the process of transforming the information into more permanent memories.

There is some evidence that the memory works better if the individual is in the same state of mind at the time of retrieval as at the time of storage.

This could mean that if you are given information after having had a few drinks, you will be better able to retrieve it in the same inebriated state.

Throughout the literature on memory, there is constant reference to attention or awareness. This is one of the keys to better memory. If you are mentally "elsewhere", you have little chance of registering that bit of information. The more you perceive the information to be trivial, the less likely you will be to recall it.

To an extent, this is normal. You are bombarded with facts and faces all day, every day: your brain censors what you should retain and store. Without this function, you would be buried under mountains of useless information.

Memory skills can be developed with practice and with regular use.

- Attend to to the present moment. A useful drill to practice at the airport, on planes or in traffic jams is to bring your mind to focus on a single object in front of you (such as a pencil) and concentrate on it for one minute. It may not sound long, but within 20 seconds or so, your active mind will be distracted and will tend to drift.
- Another trick is to make a conscious effort to pay attention to the names of people you are meeting for the first time. This not only helps you to remember the names, it is provides good practice for being in the present moment.
- To reinforce the connections between ideas as they are stored, try using mnemonic devices, tools designed to link otherwise isolated ideas. Generations of music students have used the mnemonic devise "Every Good Boy Deserves Fudge" to learn the notes on the lines on the treble clef. Create your own mnemonics to give you "memory handles".
- Get plenty of exercise to bathe the brain memory centres in oxygen-rich blood.
- Get enough rest to let the brain relax after a day of stimulus bombardment. This includes five minute "power naps" and deep breathing during the day. Fatigue will impair your concentration and your ability to remember.
- Excessive alcohol and uncompensated stress will also compromise your memory skills.

Dr Michael McGannon

The author is the medical director of the Insead Business Health course.

Back at work but life is still one long holiday

Diane Summers examines the problem of flagging productivity

Holidays are supposed to refresh employees and allow them to return to work full of enthusiasm. Productivity, it might be thought, would increase after a break.

The opposite is true, according to Helen Pitcher, a director of personnel consultants Cedar International.

August has come to an end, and with it the traditional holiday season - but British industry, far from operating on full throttle, is still idling, she says.

Pitcher first noticed employees' poor productivity after holidays by examining the computer records of her own company. Cedar has 10 consultants and 11 other staff who are engaged in research and administration.

Everyone at Cedar fills in an electronic timesheet, allocating the hours they have worked in a day between "chargeable" and "admin" time.

"We do an analysis of the accounts each month and we found a substantial drop in productivity over the summer.

"We thought that was because people were away but then we discovered the dip continued well beyond the holidays," says Pitcher.

Timesheets showed that chargeable hours were lower and admin hours were higher after an employee returned from holiday. Admin is the "dump code" for hours spent chatting by the coffee machine, she explains.

A close look at the figures also revealed lower productivity before an employee went on holiday, and showed that work done before an individual went away was often of a lower standard.

Comparing notes with other companies, Pitcher found the syndrome was common. "Line managers complained that first there was the time lost before a holiday when employees were running around getting their currency and tickets.

"Then there was the rush to get work finished and the increase in mistakes; next was the return, the showing of photographs, and so on; finally there was the slow process of getting back into the swing of things."

Managers are often afraid of appearing to be kill-joys, says Pitcher. "They're not very good about saying 'I'm glad you had a good holiday, can you now concentrate on the job please?'" she says.

Pitcher calculates that five days should be added to each week of holiday to arrive at the true cost of time off.

Figures from Incomes Data Services, the pay and conditions research group, show the most common basic holiday entitlement is 25 days in the UK - the figure is not very different elsewhere in Europe - and added to that are eight days for bank holidays in the UK, making at least 33 days off.

Using Pitcher's formula, employees lose a total of 66 productive days because of holidays.

Cary Cooper, professor of organisational psychology at Manchester University's Institute of Science and Technology, is not surprised by Pitcher's findings.

"There's a sort of 'holiday infection' that contaminates everyone around the person who has been away," he says.

As a stress guru, Cooper is emphatic that the solution is not to cut holidays. "We need them, there's no question about that," he says.

Instead of the two- or three-week holiday, taken at the peak of the season, he suggests shorter, more frequent breaks.

Not only is this better for the individual, he argues, but the employer also benefits. With shorter holidays there is not the big build-up associated with longer breaks.

There is less chat, less disruption of colleagues' work and a shorter time to get over disappointment if the holiday has not measured up to expectations.

The shorter, more frequent break can also be taken when an individual actually needs it. The tell-tale signs are: constant irritation, difficulty in concentrating, hostility, losing a sense of humour, and not listening to people.

ARTS

Television/Christopher Dunkley

All the BBC's great glory dissipated?

IF debate about the future of the BBC is to remain at the level of "Yah boo, you're a pseudo-Leninist" and "Gerroff, you Bourbon in red braces", we may as well give up hope of maintaining the level of excellence hitherto achieved in radio and television in Britain and hand the whole shebang over to the satellite people.

The "Leninist" thrust was one of several delivered by Michael Grade, one time BBC television supremo but these days chief executive of Channel 4, and the "Bourbon" riposte came from Duke Hussey, chairman of the BBC governors. For those of us concerned with programmes rather than personalities, it is agony to know that, lying beyond this squabble, there is an important debate which never seems to come out into the open.

To be fair, Grade has made the first real effort. Delivering the keynote speech at the Edinburgh Television Festival, he accused the BBC governors of political appeasement, and BBC top brass of abandoning their heritage by axing resources, creating a culture of secrecy through editorial dictatorship, and of stifling talent.

He also laid into John Birt, director-general in waiting, whom he described as "a trappist monk, unable to speak publicly", and lambasted Birt's scheme for "producer choice" which is supposed to introduce market forces into the heart of the corporation.

Down on the BBC gundecks, Grade's swipes were greeted with rapture by a staff which, even by its own high standards of moodiness and paranoia, has been especially depressed – almost despairing – recently. The feeling among the troops is that they have carried on a BBC tradition of excellence in programme-making, often for rewards well below those in the private sector, but that the organisation is now being changed, lock, stock and barrel, and its ethos cast carelessly – even unknowingly – aside in a series of moves which might be described by a soccer commentator as "getting your retaliation in first".

Their own management, it seems, is busy transforming the BBC into a Thatcherite dream – despite the fact that Thatcher herself has been deposed, Britain's administration has moved on and become less hostile towards the corporation, and the Government's own discussion paper on the future of the BBC is not due until this autumn.

Many of the powder monkeys fear that, long before they or the listeners and viewers have had any chance to put an oar in (despite the recent array of internal consultative committees), the BBC will have been changed into an organisation marooned on the "high ground" of broadcasting, and concentrating – at the expense of its traditional strengths in popular entertainment – on a style of serious journalism much favoured by the serious John Birt and his protégés from London Weekend Television's current affairs department, who now fill so many key posts in the BBC.

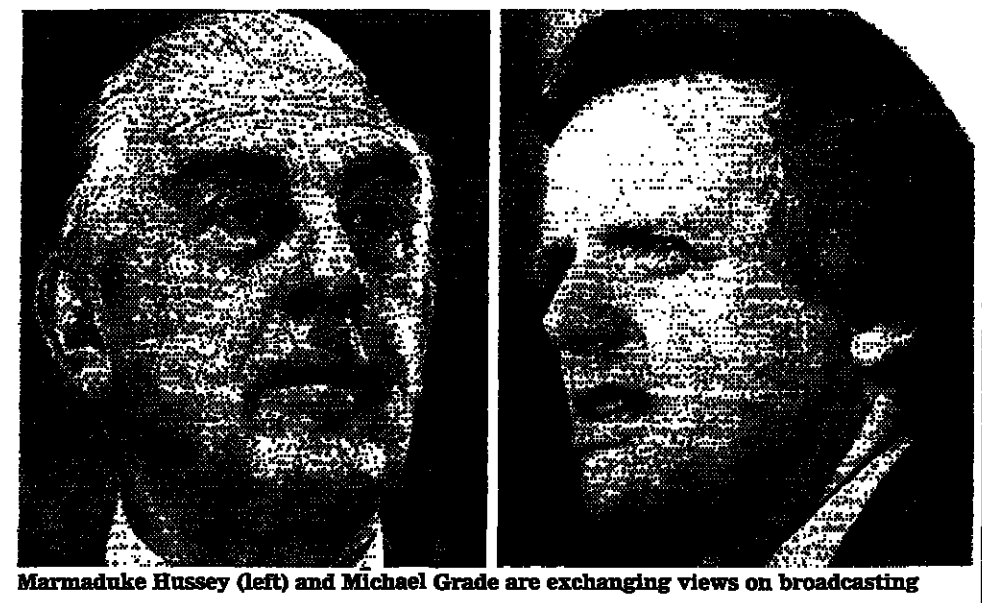
In the ranks, it is seen as the puritanical Cromwell and his New Model Army driving out the cavaliers. The puritan style, known as "Birtism" and often characterised as "Stalinist" because of its centralised editorial structure, serves as a symbol for all the changes being introduced, including "producer choice".

The managers see this as a way of devolving true choice to individual producers, allowing them to use, say, the cameraman they want rather than the one nominated from the roster; the intention is to put pressure on overheads. Yet in the ranks, the very phrase "producer choice" is widely seen as an example of Orwellian Newspeak, a way of putting the full burden of costing on to individual producers who will in future be charged for everything from make-up to ballpoint pens... everything, that is, except the cost of carrying what they see as the notorious BBC bureaucracy with its chauffeur-driven limousines and country house hotel weekends: the very things, say those on the lower decks, on which producers would most readily choose to economise, and the very thing for which independent programme-makers – against whom BBC producers are now to be measured – do not have to pay.

Furthermore, though BBC producers are to be allowed to go outside the organisation to find cheaper editing suites or scanner vans, the BBC's editing suites and scanner vans will not be allowed to compete for outside custom. Opponents maintain that this will destroy the BBC's talent base in the craft industries, which has done so much to make the corporation into a (many would say the) world leader in programme making.

However, having raised our eyes from the Grade-Hussey bout to look at the background problems, it is necessary to step back again and take an even longer view of the underlying principles. On the whole, politicians are suspicious of broadcasters and broadcasting. It strikes them as a business with nearly as much power as their own – more, it seems sometimes – and even less responsibility or answerability.

Conservative politicians are particularly opposed to broadcasting being run by uppity intellectuals. If we must have this modern fourth estate, they would rather it was run by businessmen with the sole purpose of making a profit; there are few profits in investigative journalism or arrogant *Death On The Rock*-style exposés.



Marmaduke Hussey (left) and Michael Grade are exchanging views on broadcasting

Businessmen can be relied upon to concentrate on game shows, soap operas, and tabloid journalism of the human interest variety, not a lot of embarrassing stuff about security scandals and police corruption. Even though ITV was largely run by businessmen it was, for historical and social reasons, deeply impregnated with BBC values. So the Thatcherites introduced franchise auctions which, from next January, will ensure that virtually nothing is shown in peak viewing time which does not make a profit. That should take care of ITV.

But the BBC is a much bigger, older, tougher problem. It was created at a time when the scarcity of technical resources, specifically wavelengths, was seen as necessitating a monopoly, and thus a collectivist system of support. By the 1980s collectivism was seen in Downing Street as synonymous with socialism, socialism was synonymous with communism and so the BBC was a hotbed of reds, QED. What was needed was the firm smack of market forces to bring the arrogant BBC into line with everything else in the country: education, local government, trade unions, industry and so on.

When Margaret Thatcher was succeeded by John Major, many broadcasters who believed that the BBC should resist the call of the market heaved sighs of relief. Since the licence-fee system provided two highly successful national television services and five highly regarded radio networks for less than the cost to the viewer of a single movie channel on the Astra satellite, and since the BBC had proved year after year, its superiority in international programme contests, its future should, surely, be secure. Thus it comes as something of a shock to them now to hear their own bosses countering Grade's charges with Thatcherite arguments about competing in the marketplace.

Yet this may not be the BBC's worst problem. Much has been said about the corporation's need to maintain its success in the popular sector of the programme spectrum if it is to sustain its claim on the licence fee, and it is a reasonable argument.

Yet what should really have been worrying Mr Hussey this week is not just Mr Grade's attack, but the fact that the BBC seems to have lost the sympathy of David Attenborough, probably the most highly regarded broadcaster this country has ever produced, and of John Tusa who was a superb television broadcaster and more recently an inspiring managing director of the World Service. Attenborough now says that the very things which gave the BBC its unique stature and strength are being destroyed, and Tusa says he is leaving.

It would be bad enough to lose its soap opera audience, but once the BBC loses the loyalty of Britain's middle class intelligentsia, it may as well start folding its tents.

Edinburgh International Festival

Tchaikovsky

AS the Edinburgh festival reaches the middle of the final week, its portrait of Tchaikovsky is nearly complete. The composer has proved to be a rewarding subject, mainly because his life's work spans such a variety of media – opera and ballet, concertos and symphonies, vocal and choral, all had a representative showing in this year's programme.

Less attention has been paid to setting his music in context, although the Royal Scottish Orchestra's pair of concerts over the bank holiday weekend each gave a nod in that direction. The first offered a triple novelty: three *Hamlet* scores, one each by Tchaikovsky, Prokofiev and Shostakovich, the last a mélange of his film score and theatre music, arranged by the evening's conductor, Gennady Rozhdestvensky.

This was a clever piece of programme-planning. It told us little about Shakespeare's *Hamlet*, but a lot about the personalities of the three composers. While Prokofiev and Shostakovich viewed the play from the outside, commenting on the issues with irony and detachment, Tchaikovsky's nature led him instead to try to enter the protagonist's soul. His music is overtly emotional and in Hamlet's tortured, introspective character it is easy to see the composer feeling some personal identification.

Given the interest of the programme, it did not matter greatly that the orchestra's playing was less than brilliant. But when Neeme Järvi arrived a couple of days later to conduct it in some of the best-known Tchaikovsky scores, the untidiness of the playing did make the music's technicolour virtuosity pale rather.

This time it was chronology that provided an added dimension, as the concert included both Tchaikovsky's first and last surviving orchestral works – *The Storm* Overture and the *Sixth Symphony*. In between Peter Donohoe, the festival's resident Tchaikovsky pianist, played the *First Piano Concerto* with power and delicacy, if not enough insight always to make the music spark into life under Järvi's dampening direction. In the last five minutes, though, Donohoe really did set the fireworks blazing.

* * *

All of this was the public Tchaikovsky. The private man remains more of an enigma and the festival's most important single gesture was to familiarise us with one of the composer's rarely-heard private utterances, the unaccompanied *Liturgy of St John Chrysostom*. Under the rigid conventions imposed on composers of music for the Russian Orthodox Church, Tchaikovsky was required to adopt a style far removed from that of his worldly self. The result is music of heartfelt simplicity and no small expertise.

There could hardly have been a more inspired idea than to site this performance at night in St Giles's Cathedral on the Royal Mile. Under Arthur Oldham's direction, the Edinburgh Festival Chorus made the rafters ring with singing of glorious concentration and power, the basses emulating the imposing growl of a native Russian choir. Choral music in the silence of the night here demands to become an annual festival event.

Richard Fairman

The Royal Scottish Orchestra's concerts sponsored by British Telecom and Scottish Power

Maps For Lost Lovers

THE National Youth Theatre (NYT), founded in 1956, is now a mature institution. Its alumni have contributed to the English stage as actors and technicians. To see an NYT show is to see one future in English theatre.

Now at The Place Theatre, Euston, the NYT presents a devised 90-minute multi-media piece called *Maps For Lost Lovers*. It makes a refreshing change from usual London theatre fare.

Maps For Lost Lovers offers a first opportunity to see these actors; it also suggests what theatrical material will look like within a decade. It most resembles the new forms of computer virtual reality and hypertext, where you choose what to see and how to see it.

There are 14 actors in many roles, no plot, three stills projectors, two video projectors and a series of gaff-rigged screens (one per actor) which float in an ultra-violet twilight.

The text (by director Dean Byfield) passes from one medium to another, now a voice, now an image, now a *projected page*.

At the heart of the show lies the horror of loneliness and the pain of togetherness, repeated in open-armed yearning and fights between the ever shifting couples on stage. The action follows wishes and hopes transformed and compromised by the environment. Gestures and text repeat themselves: "Will the one I love steal me a car with bullet holes down the side? Will it make me run down the street and use my voice again?" is first said, then projected, then represented.

Sharp scenes emerge, including a wonderful exchange where a blindfolded actor instructs her partner to say those most and least personal words, "I love you" proving they belong to everyone and no one: "Say it like a surgeon... say it like you're angry." Another fine scene has the cast in a frenzy of preening and primping at a nightclub, settling by force of custom into a uneasy embraces.

The acting is sure-footed, the design and filming (Laura Hopkins, Caroline Rye) enlightening, and the ambient music (Andy Price) an aid to reflection. Since Gutenberg made everyone a reader and the photocopier made everyone a publisher, this form of multi-media "hyper-theatre" *makes everyone a director.*

Andrew St George

The Place Theatre, London (071) 387 0031 Until September 5

English National Opera

Rigoletto and Ariadne

Max Loppert

LAST week's curtain-up on the 1992-93 English National Opera season filled the Coliseum with the sombre chords of *Rigoletto*, and then with the chrome-shiny décor and hip-thrusting body-language of Jonathan Miller's celebrated Fifties New York updating. This production was supposed to have been retired from service a few years back; but in hard times its crowd-pulling tendencies amounted to an offer ENO could not refuse, and it has been hoist into harness once more.

I have no quarrel with that. Miller's time-travelling correspondences have never made true Verdian sense under the vividly detailed surface (for if the Duke is a minor villain, not a real political force in the land, his abuse of power for private ends is hardly a shocking matter). But at its best, when tautly delivered, the show has allowed the company to re-create the opera's emotional relationships with a raw dramatic urgency that is its own best justification.

Unfortunately, that all-important tautness seemed woefully absent on Thursday, and, without the staging, declined into just another operatic costume-drama, a bit tatty round the edges. It had an under-rehearsed look and – as a result of Michael Lloyd's expansive but too often slack-muscled conducting – sound. No concern for all-embracing word-clarity was evident; no effort had apparently been directed toward basing the drama on the discipline of the singing line.

This particularly affected Cathryn Pope's first attempt at Gilda. The jury is still out on whether her problem is miscasting – as the quantity of strained high phrases might seem to indicate – or inadequate schooling (for Miss Pope's considerable experience has been built up on types of soprano-writing very different from Verdi). I lean to the second opinion, and suspect that she will find eventually her own way into the music, and thence into a character that on this occasion proved so elusive.

As "Duke" and Rigoletto we had the original 1982 cast-members, Arthur Davies and John Rawnsley. Time has coarsened the tone of the former and taken much of the house-filling vocal spin out of the latter. But both still know how to hold the stage, and in this context the gift proves precious. As a small bonus there were also Terry Jenkins's Borsa, always freshly inventive, the dusky alto richness of Patricia Bardon's Maddalena, and the genuine dramatic imagination shown by Michael Druiett's lumbering, sweaty Sparafucile.

On the whole, though, a disappointment.

Next evening, another ENO revival, but this time a much more cheering one: an *Ariadne on Naxos* that made a big-house success of this marvellous but infinitely tricky small-house, chamber-orchestral opera.

In 1983 Graham Vick's production had consistently botched the difficult points; now, as mounted by Lynn Binstock, the routines of the Prologue have been tidied up a good deal (if not completely) and the plainness of the Opera becomes a vehicle for some powerfully effective principal performances.

To the new conductor, Alexander Sander from Vienna, must go main credit for the feeling of apt scale, plausible balance and forward movement that underpins the whole reading.

Two large-voiced dramatic sopranos return to their roles: Rita Cullis, a Composer lacking vulnerability and charm but filling the theatre with brightly focused sound, and Janice Cairns, an Ariadne of noble personality and heart-warmingly bold, risk-taking approach to the exposed vocal lines.

The great event of the evening was, however, the first London Zerbinetta of the American Cyndia Sieden – astonishingly sweet, true, and free of coyness. In company with a trim quartet of zanies led by Paul Napier-Burrows, she turned the Strauss-Hofmannsthal re-invention of the *commedia dell'arte* into one of opera's most savoury pleasures.

English National Opera at the London Coliseum, St Martin's Lane, WC2, (071) 836 3161 *Rigoletto* is sponsored by National Power

Fringe notes

SANDRA Bernhard is best known in the UK as the up-front gay who formed a two-girl ratpack with Madonna. Yet this footnote to history was enough to fill the 3,000 seater Playhouse twice in a night, and to persuade me that Madonna was probably running hard to keep up with the feisty Bernhard.

She wanders on stage like a stoned-out freak and is guided by one of her four-strong band to the mike where she performs her own version of "Fever", a long bitch about virtually everyone who inhabits Vanity Fair and Versace. Poor old Joni Mitchell is quickly dismissed as a "hippy freak". You realise that as a development of the "sex and shopping" novel Bernhard has perfected the "sex and shopping and song" show.

What makes it thoroughly enjoyable is that Bernhard seems a genuine free spirit – no discreet costume changes for her, but a full frontal thrust into a succession of bizarre dresses – and more surprisingly, owns a rich and full ranging voice. So you are caught by an accomplished raconteur, with some informed insights into a twilight world, who then slides into some evocative songs. Her version of "Woodstock" was quite tingly.

Bernhard calls her show "Giving Till It Hurts", which is pretty self-indulgent. Beneath the bravado, there is something vulnerable about Bernhard – the body is held defensively; the songs seem therapeutic; the calls for the gays in the audience to come out slightly desperate.

This is a peep into a world where fantasies are forced into realities; where ambition is no more than a six-page spread in Vogue; where dreams come true only on stage when the audience applauds. Bernhard is odd and talented, perfect late night diversion.

Women are big in this year's Fringe. The huge Jo Brand won a Perrier nomination; the simply gigantic Thea Vidale deflates criticism with her foul mouthed and funny polemic on what women want, like, and need; and the slim and demure Louise Rennison was my personal favourite with her reminiscences of girlhood in Leeds, New Zealand and London in the 1960s.

Rennison's delivery is completely natural, almost conversational asides which makes her general immersion into sex and drugs and rock'n'roll seem charming, funny, even innocent. She survived a car ride with Led Zeppelin: a back-stage disaster with Pink Floyd: and, in the title of her show at the Assembly Rooms, "Stevie Wonder felt my face". If only all lives of experimentation and over-indulgence proceeded so sweetly.

Antony Thorncroft

INTERNATIONAL ARTS GUIDE

AMSTERDAM

Concertgebouw 20.15 Masaka Nakata conducts Kwansei Gakuin Symphony Orchestra in works by Liszt, Beethoven and Nielsen. Sat: Edo de Waart conducts Mahler's Third Symphony (6718 345). Tomorrow and Sun afternoon in Muziektheater: Samson et Dalila (6255 455)

ATHENS

ATHENS FESTIVAL

Odeon of Herodes Atticus 20.30 St Petersburg Ballet in Minkus' Don Quixote, in a production by Alexander Gorsky based on the original choreography by Petipa, repeated tomorrow. Sat and Sun: St Petersburg Ballet mixed bill. The festival runs till Oct 5 (322 1459)

BERLIN

BERLIN FESTIVAL

The theme of this year's festival, which opens tonight and runs till Sep 27, is Prague and its links with Berlin. The Hebbel Theater programme includes guest productions from Prague of plays by Vaclav Havel and other Czech authors. A series of documentary films about Czech composers is being shown at the Deutsches Historisches Museum, Unter den Linden, and there is a photographic exhibition of the Moderns in Prague 1900-25 at the Festival Gallery, Budapester Strasse 48.

The main musical events take place at the Schauspielhaus and the Philharmonie, apart from Daniel Barenboim's concerts next Mon, Tues and Wed with the Staatskapelle, which take place in the Staatsoper unter den Linden (254 89250)

OPERA

Deutsche Oper 20.00 World premiere of Aribert Reimann's new Kafka opera Das Schloss, conducted by Michael Boder and staged by Willy Decker (further performances on Sat and Sep 13). Tomorrow: Zar und Zimmermann. Fri: Christopher Bruce's ballet Cruel Garden. Sun: Die Zauberflöte (West Berlin 3410 249)

Staatsoper unter den Linden 19.30 Opening night of the new season: Hindemith's Neues vom Tage, also Sun. Tomorrow: Swan Lake. Fri: Paul Dessau's Die Verurteilung des Lukullus. Sat: Madama Butterfly (East Berlin 2004 762). Fri in Komische Oper: new season opens with Gluck's Orfeo, starring Jochen Kowalski (East Berlin 2292 555)

CONCERTS

This week's Berlin Festival events at the Philharmonie include a Berlin Philharmonic concert conducted by Abbado tomorrow and Fri, and a Czech Philharmonic concert on Sun conducted by Jiri Belohlavek. The Kammermusiksaal has a recital by the Emerson Quartet on Fri and the Prazak and Skampa Quartets on Sun (West Berlin 2548 8232). Vladimir Ashkenazy conducts Beethoven's Ninth Symphony tomorrow in the Schauspielhaus. Rafael Frühbeck de Burgos conducts an all-Dvořák programme on Sat (East Berlin 2090 2156)

THEATRE

A new production of Goethe's Clavigo opens tomorrow at the Schiller Theater (West Berlin 3126 505). The repertory at Maxim Gorki Theater includes plays by Edward Albee, Arthur Miller and Chekhov (East Berlin 2082 783). The Schaubühne has a production of Maxim Gorki's The Lower Depths showing at the Freie Volksbühne (West Berlin 890023). The Berliner Ensemble is closed till next Feb.

CHICAGO

● Ravinia Festival: this week's performances are by Martha Graham Dance Company, daily till Sat. Sun: Ravinia Festival Orchestra plays country-western music. Next Mon: this year's festival ends with a popular Tchaikovsky concert (312-728 4642)

● Lyric Opera opens its 1992-3 season on Sep 19 with Otello, starring Chris Merritt and Lella Cuberli. Other productions include Elektra (Sep 29), The Bartered Bride (Oct 9), William Bolcom's McTeague starring Ben Heppner and directed by Robert Altman (Oct 31), Pelléas et Mélisande with Frederica von Stade (Nov 14), Un ballo in maschera (Nov 28), La bohème (Dec 12) and Das Rheingold in Jan (332 2244)

GOTHENBURG

Konserthus 19.30 Neeme Järvi conducts the Gothenburg Symphony Orchestra in works by Sibelius, Atterberg and Nielsen, repeated tomorrow. Next week: James Galway (167000)

LONDON

● BBC Proms: Riccardo Chailly conducts the Royal Concertgebouw Orchestra tonight and tomorrow at the Royal Albert Hall. Fri: Anne Sophie Mutter plays Berg's Violin Concerto with the LSO. Sat: Günter Wand conducts Bruckner's Eighth. Sun: Ashkenazy conducts the Berlin Radio Symphony Orchestra. The Proms run till Sep 12 (071-823 9998)

● Jonathan Miller's ENO production of Rigoletto, with John Rawnsley, Cathryn Pope and Arthur Davies, can be seen tonight and Fri at the Coliseum. Tomorrow and Sat: Ariadne auf Naxos (071-836 3161)

● A Caribbean Carnival Extravaganza, featuring dancers and a calypso orchestra, takes place tomorrow, Fri and Sat at the Barbican (071-638 8891)

● Opera Factory's production of Harrison Birtwistle's opera Yan Tan Tethera opens tomorrow at Queen Elizabeth Hall. Six performances till Sep 12 (071-928 8800)

● The Royal Opera season begins on Sep 12 with Tosca starring Pavarotti (071-240 1066). Glyndebourne Touring Opera opens a month-long season at Sadler's Wells on Sep 24 (071-278 8916)

NEW YORK

THEATRE

● Under Milk Wood: a stage production of the Dylan Thomas work, presented by Jean Cocteau Repertory (Bouwerie Lane Theatre, 330 Bowery at 2nd St, 677 0060).

● Falsettos: a revival of two of William Finn's three one-act musicals about a man who leaves his wife and son for a male lover (Golden, 252 West 45th St, 239 6200).

● The Best of Forbidden Broadway: tenth anniversary edition of Gerard Alessandrini's ever-fluctuating musical revue (theatre East, 211 East 60th St, 838 9090).

● Jelly's Last Jam: a show which combines the music of Jelly Roll Morton, self-proclaimed inventor of jazz, with an unsparing delineation of the man himself (Virginia, 245 West 52nd St, 239 6200).

● Ticketmaster answers inquiries and sells tickets for Broadway shows (307 4100) and rock/pop concerts (307 7171)

MUSIC

State Theater 20.00 NY City Opera production of Il barbiere di Siviglia, also Sat. Tomorrow: Rigoletto. Fri: Turandot. Sat afternoon: La bohème. Sep 11: first night of new production of Busoni's Doktor Faust (870 5570). The Philharmonic season opens on Sep 16 (875 5030). The Metropolitan Opera re-opens on Sep 21 with Les Contes d'Hoffmann (362 6000)

STOCKHOLM

● Gennady Rozhdestvensky conducts the Stockholm Philharmonic Orchestra tonight and tomorrow at the Konserthuset. The programme includes Beethoven's Seventh Symphony and Stenhammar's First Piano Concerto played by Mats Widlund. In tomorrow's concert, Widlund plays Hilding Rosenberg's 1930 Piano Concerto. Next week's concerts feature music by Dvořák, Lidholm and Nielsen (244130)

● Royal Opera performances this week include Prokofiev's ballet Cinderella tomorrow, Il barbiere di Siviglia on Fri and Suppé's operetta Bocccaccio on Sat afternoon. Drottningholm Court Theatre has Ivo Cramer's new ballet Figaro on Fri and Sat. The first new production of the 1992-3 season at the Royal Opera is the world premiere on Sep 12 of Ingvar Lidholm's Strindberg opera A Dream Play, staged by Götz Friedrich (248240)

European Cable and Satellite Business TV

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MONDAY TO FRIDAY

CNN
2000-2030, 2300-2330 World Business Today – a joint FT/CNN production with Grant Perry and Colin Chapman

Super Channel
0830-0900 (Mon) FT East Europe Report – weekly indepth analysis from FTTV
2130-2200 (Tues) Media Europe – what's new in European media business
2130-2200 (Wed) FT Business Weekly – global business report with James Bellini
0830-0900 (Thurs) Media Europe
2130-2200 (Thurs) FT Eastern Europe Report
0830-0900 (Fri) FT Business Weekly

Sky News
0130-0200 (Mon), 2130-2200 (Thurs), 0530-0600 (Fri) FT Business Weekly

SATURDAY

CNN
0900-0930 World Business This Week - a joint FT/CNN production
1900-1930 World Business This Week

Super Channel
1930-2000 FT Eastern Europe Report

SUNDAY

CNN
1030-1100, 1800-1830 World Business This Week

Super Channel
1800-1830 FT Business Weekly

Sky News
1330-1400, 2030-2100 FT Business Weekly

FINANCIAL TIMES

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Wednesday September 2 1992

A PR coup for the banks

THE BRITISH clearing banks' talent for public relations is almost as impressive as their genius for losing money. To have conveyed the impression that they want to introduce charges on current accounts in the depths of a particularly severe recession invites no more flattering verdict. Yet, ironically, the clearing banks have a reasonable case for phasing out free banking. On past form they will probably fail to make it persuasively, before exploiting the notorious inertia of the majority of bank customers by slapping on the charges regardless.

For years the big four clearing banks complained that they did not earn enough from current accounts to defray the heavy costs of money transmission. Then Midland Bank ensured that transparency in bank charges would be deferred *sine die* when it introduced "free-if-in-credit" banking in the *mid*-1980s. This entrenched a system of cross subsidisation. Lloyds Bank stirred the pot further when it started to offer interest on current accounts in 1988.

Since then retail bank profits, while still handsome enough to absorb the consequences of the banks' folly in corporate lending, have been under growing pressure. As for the customers, those who have managed to stay out of overdraft have enjoyed an inexpensive service, subsidised by a minority that includes people paying usurious interest rates of up to nearly 40 per cent on unauthorised dips into the red.

Part of the rationale for offering such a competitive current account service was to lock customers into a long-term relationship, thereby opening the way for the banks to sell them more lucrative savings products such as life assurance and pensions. Such a strategy, which involved turning a core banking product into a loss leader, looked risky in the 1980s. It looks more risky in the present decade when endowment policy bonuses are being cut and growing disillusionment is felt by consumers over the products and quality of service peddled by life assurance salesmen.

The problem that the big four clearing banks face in seeking to address the declining profitability of retail banking is that their history and size continue to give rise to the suspicion that they are part of an oligopoly, even if many areas in which they operate are highly competitive. The merest hint of collusion would give the Office of Fair Trading justifiable cause to sit up and take note.

Yet in practice the big four clearing banks are no more likely to move as one on current account charges than they did on the introduction of plastic card charges. Their more normal game is follow-my-leader, after sizing up the market's response to innovation.

The Midland's move to free banking in 1985 was in part a response to the free banking service provided by smaller competitors such as the Co-operative Bank and the Royal Bank of Scotland. Now that the pendulum looks set to swing the other way, it would not be surprising if the big banks once again restricted free banking to those who maintain a high minimum credit balance in their account, while smaller competitors, whose ranks now include a more versatile group of building societies, offer a completely free current account alternative.

Such competition probably offers a more effective remedy than anything the OFT can do. And in the long run, greater transparency in charges will be healthy for both the banks and their customers.

Mideast impasse

WHEN EXPECTATIONS of rapid progress are raised in Middle East peace negotiations, bitter disappointment can not be far behind. So it has proved in the last 10 days, as Israelis and Palestinians have moved towards a thoroughly predictable impasse in their Washington talks on arrangements for Palestinian self-government in the Israeli-occupied West Bank and Gaza Strip. The latest round started with what seemed to be a fair wind, generated in large part by the election of a more conciliatory Israeli government under Mr Yitzhak Rabin. But the relatively calm and businesslike atmosphere of the bilateral negotiations has served merely to highlight vast differences on matters of substance. Further concessions from both sides will be necessary to avoid a breakdown.

At issue is the body which Israelis and Palestinians agree should be set up to administer the territories during a five-year transitional period. The Palestinians want a fully-fledged authority with legislative powers and control over land; the Israelis have proposed a much more limited arrangement with domestic administrative powers but no say in security, foreign affairs or the running of Jewish settlements.

This is no semantic dispute. It goes to the heart of the aspirations and fears on both sides. The Israelis say that by demanding a legislative authority, the Palestinians are seeking to pre-empt future negotiations on the final status of the territories and set up the nucleus of an independent state. The Palestinians reply that by circumscribing their self-rule so narrowly and reserving the right to continue building settlements, appropriating land and extracting water in the West Bank and Gaza, the Israelis are allowing themselves the scope to consolidate their hold over the territories in perpetuity.

Both sides are missing the immediate point. What they are discussing is a transitional arrangement to enable Israelis and Palestinians to show they can live together free of violence, intimidation and interference. The Israelis need to be assured that a self-governing authority can not constitute a threat to them. Equally, if the word autonomy is to have any meaning, the Palestinians can not be asked simply to administer existing Israeli occupation laws; they have to be given the ability to initiate, or amend, legislation in their own right.

Above all, though, Israelis and Palestinians will have to recognise the need to avoid being completely dogmatic about the ultimate outcome. If they try to predetermine the outcome of final-status negotiations that will only start in three years at the earliest, they will get nowhere.

Baiting the Beeb

IT IS WELL known that broadcasters spend an above average portion of their time honing their skills in malicious gossip. Once a year, they do this in public at the Edinburgh Television Festival, which has just ended.

The prime time slot in this year's event was occupied by Mr Michael Grade, chief executive of Channel 4, who attacked the BBC for its "political appeasement" of the government in pursuit of a new charter based upon continued funding by the television licence fee. He went on to brand the management style of the corporation as "pseudo-Leninist".

It was probably this remark which inspired Mr Marmaduke Hussey, chairman of the BBC board of governors, to dismiss Mr Grade as a "Bourbon in red braces". It was left to one of Mr Hussey's fellow governors to acknowledge that much is wrong with the BBC, not least its system of governance, where there is a serious confusion between regulatory and management functions.

This is an inauspicious beginning to the BBC charter debate, which is to be officially inaugurated shortly by a government green paper. Lenin versus King Louis is hardly a billing for the turn of the 20th century.

The weakness of Mr Grade's position is that he denies the need for change in an era of multi-channel television. Logically, he must be even more committed than current BBC management to the licence fee and hence to the corporation's longstanding supplicant relationship with government.

It it not possible to identify with similar clarity the weakness of Mr Hussey's position, since in six years of office, he has failed to enunciate one. The BBC, after a laborious exercise in self-examination, has declined to set out an official view about its own future before the green paper.

This may be in some circumstances be judged tactically shrewd, but its prime cause is the fact that the BBC has for the past 15 months had a cautious director-general, Sir Michael Checkland, and a director-general designate, Mr John Birt, who thinks the BBC should be moving upmarket and who takes a more robustly interventionist view about the role of senior management. The predictable result has been confusion.

Since the choice of director-general is easily the most important direct task of the governors, it may well be asked in the light of this botched indecision what this oddest of public sector boards is capable of doing well.

It all underscores the case for moving towards a single regulatory body for British broadcasting, taking in ITV, the BBC and the largely unregulated satellite broadcasters too. That at least was a point well made in Edinburgh.

US airlines face a long and difficult journey to recovery, says Nikki Tait

A summer storm that is set to last

April may be the cruellest month but, for US airlines, August was a close contender. At the height of the summer travel season, when the industry traditionally lines its coffers, it was instead plagued by fare cuts, tumbling share prices and warnings of poor financial performance for the rest of the year.

In one week alone, Northwest slashed fares by up to 47 per cent on Pacific routes. American Airlines, one of the nation's leading carriers, scuppered a proposal by Delta, the third largest carrier, for a proposed 5 per cent rise in domestic fares. And bankrupt Trans World Airlines stepped up the dogfight over Atlantic fares by offering $398 (£201) return tickets from New York, Washington and Boston to various European cities.

On top of this, the finance director at American Airlines – a bellwether for the industry – told analysts that the company would post a heavy third-quarter loss. On Wall Street, airline shares are trading close to their 52-week lows.

The events of this summer, which come against a background of losses, have exacerbated a crisis in the industry and are forcing a rethink in strategy, even among the largest and strongest carriers. Delta has announced "down-sizing" moves, including the loss of about 4,000 jobs – about 5 per cent of its employees – greater use of contract services and more "seasonal" scheduling of flights.

Mr Stephen Wolf, chairman of United, the largest US airline, has also hinted that unspecified "alternative actions" by the Chicago-based carrier might be necessary to reduce expenses, should the industry's economics fail to improve.

Already, capital expenditure plans, which traditionally consume about 15 per cent of a carrier's revenues, have been cut. "Neither we, nor other airlines, can continue spending capital unless we can earn a profit on our investments," says Mr Bob Crandall, head of American Airlines. "Without profits, the airplanes and facilities that our customers – and the country – want us to provide simply won't be there."

Such dire warnings are a long way from the goals of industry deregulation, a policy launched in 1978 when Congress decided that airlines should be able to fly freely within the US, charging whatever they liked. The objective was low-cost air travel and an industry driven to efficiency by competition.

Today, air travel is cheap and carriers are certainly cost-conscious. The US Air Transport Association, for example, estimates that air fares have risen 53.4 per cent since deregulation, while consumer prices have gained 108.9 per cent – meaning that air fares have fallen in real terms. This summer's particularly savage fare war took domestic prices back to 1983 levels.

Service quality also appears to have improved – at least according to official statistics. Figures compiled by the US Department of Transportation show travellers' complaints on a declining trend since the late 1980s. The number of on-time flight arrivals, for example, stood at 82.5 per cent last year, compared with 78.7 per cent in 1988.

But all this has been achieved at the expense of profits. Since the start of the 1990s aggregate losses have totalled $7bn (see graph) and there is little sign of a return to profitability in the immediate future. In only one of the past 10 years has the industry's annual after-tax profit margin topped 3 per cent. For the period as a whole, the average after-tax profit margin has actually been negative.

US airlines
By revenue passenger miles 1991

1. UAL (parent of United)
2. AMR (parent of American)
3. Delta
4. Northwest Airlines
5. Continental Airlines
6. USAir
7. Trans World Airlines
8. America West
9. Southwest Airlines

Source: Company reports

	Operating income 1991 $m	Operating income 1990 $m	Net income 1991 $m	Net income 1990 $m
Majors				
AMR	5.8	124.0	(239.9)	(39.6)
America West	(99.4)	(31.8)	(213.8)	(74.7)
Continental	(218.9)	(425.6)	(305.7)	(2,343.9)
Delta	(274.6)	(227.2)	(258.1)	(172.6)
Northwest	(60.3)	[illegible]	(3.1)	(10.4)
Southwest	62.4	81.9	26.9	47.1
TWA	(353.5)	(162.0)	34.6	(237.6)
UAL	(494.1)	(36.3)	(331.9)	94.5
USAir	(175.6)	(501.1)	(349.6)	(487.5)
Total majors	(1,606.2)	(1,320.6)	(1,640.6)	(3,224.7)
Other airlines				
Alaska	34.6	28.4	10.3	17.2
Atlantic Southeast	52.5	39.9	32.5	25.4
WestAir	(9.5)	(11.2)	6.5	(12.3)
Total other airlines	77.6	57.1	49.3	30.3

NB: This excludes Pan Am, Eastern and Midway losses

The reasons behind the crisis now facing US airlines are complex. Much blame has been put on the Gulf war and the US recession by both the airlines themselves and by industry observers. The Middle East crisis led to sharply higher fuel prices in the second half of 1990; the stagnant domestic economy resulted in a 2.2 per cent fall in domestic traffic last year, the first downturn for 10 years.

But the problems run deeper. Ever since deregulation, which introduced dozens of low-cost competitors, the industry has been in turmoil. In addition to the greater number of competitors, upheaval was created by the development of national "hub" networks, a strategy adopted by the big airlines to combat the new entrants and which led to a process of acquisition and consolidation.

Under the hub system, an airline arranges for flights from different cities to fly into a central "hub" airport at roughly the same time. Passengers then join connecting outward flights. This is plainly efficient; there would be limited demand for a direct service between, say, Detroit and Little Rock. But by funnelling passengers who start from a large number of cities through Memphis, for example, there is a good chance of filling the aircraft from Memphis to Little Rock.

To maximise the benefits of this system, carriers sought to expand their domestic coverage – and mergers were a quick method. Sometimes these were relatively painless, as in the 1987 merger between Delta and Western. But, more often, the combining carriers encountered severe problems of integration. Northwest Airlines' takeover of Republic in 1986, for example, was dogged by labour difficulties, operational disruptions and consumer disenchantment.

While this consolidation trend was underway, deregulation and the ready availability of acquisition capital lured a number of financial operators into the industry. These include Mr Carl Icahn at TWA and Mr Al Checchi at Northwest Airlines. As a result, several carriers came under the control of people whose management skills in a difficult industry were untested. At the same time, acquisitions brought billions of dollars of debt to the airlines' balance sheets, a burden which carriers such as TWA, Continental and Northwest are still carrying.

Given these airlines pressing need for cash flow in a market dogged by overcapacity, the outbreak of fare wars was only to be expected. And that is precisely what has happened. This summer, for example, half-price travel was available on most domestic routes. No sooner had these fares been withdrawn from the market, than 30 per cent was lopped off advance autumn fares.

So how and when will it all end? In theory, corporate Darwinism should take over; airline failures should reduce the overcapacity in the industry. So far, the 1990s have seen the demise of Pan Am, Eastern, Midway and the reincarnated Braniff. The futures of some larger, and similarly distressed carriers – including Continental, Northwest and TWA – are still unresolved.

But in practice the US bankruptcy system provides an obstacle to the process. A company that obtains bankruptcy court protection from its creditors – which Continental, TWA and America West have done – gets relief from most debt payments while it tries to restructure. Since a "dead" airline is worth relatively little (there is a surplus of equipment and aircraft, so only international routes and landing slots tend to attract buyers), creditors have every reason to encourage a reorganisation plan.

But the carrier still needs to earn enough cash to pay its operating bills, often resorting to either asset sales and/or ticket promotions. This has been the catalyst for many of the fare wars, with stronger carriers obliged to match aggressive fare-cutting by their bankrupt rivals.

The current crisis has prompted growing demands for reform by the solvent airlines. "Congress should change the nation's bankruptcy laws, which have worked badly in every industry," says Mr Crandall of American. Unfortunately for Mr Crandall and his counterparts, however, there is little prospect of any overhaul of the system.

As in other troubled industries, foreign investment is an alternative solution. The $750m that British Airways proposes to invest in USAir, for example, is a significant contribution, given the US carrier's $2bn debts and $760m of losses in the past two years.

But relief from this source may also be limited. US rules restrict foreigners to 49 per cent of a domestic airline's equity, and 25 per cent of the voting rights. Moreover, globalisation of the airline industry is a two-edged sword.

In contrast with the US domestic market, international travel is still growing, and the stronger US airlines also want to continue their own push into international markets. Many have historically had little exposure overseas. International revenues accounted for a third of the total at United in 1991, and only about 21 per cent at American.

Accordingly, the larger US carriers would like their government to use approval for deals, like the BA-USAir transaction, as a bargaining counter to win concessions abroad for US carriers.

An alternative approach to the industry's problems is presented by Southwest Airlines, the only sizeable carrier to remain consistently profitable in recent years. Based in Dallas, Southwest has specialised in flying direct city-to-city services on popular commuter journeys, rather than funnelling flights through a hub and attempting to provide national coverage.

It uses one type of aircraft, the Boeing 737; keeps its costs and fares to a minimum; and regularly attracts the fewest consumer complaints of any leading carrier. Its performance has attracted interest from larger rivals. American, for example, recently said that it might either have to bow out of certain markets where Southwest competes, or attempt to rival its low-cost operating structure.

For most of the industry, however, the immediate prospect is for more of the same. The fare cuts offered this summer and autumn have probably doomed carriers to sizeable losses in the third quarter of 1992, and the final three months of the year traditionally lose money.

A further round of consolidation is also widely-expected. The continuing losses and dwindling cash at TWA is pressuring Mr Icahn, the carrier's owner, its creditors and its unions to negotiate a reorganisation plan under which the creditors and unions would become the leading shareholders. But with some of its international assets already sold, and BA-USAir a potential buyer of others, it seems likely that any "restructured" TWA would be a smaller operation.

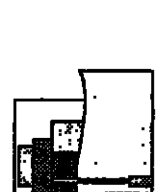
BA is clearly a possible saviour for USAir, and there are still suggestions that Northwest and Continental will eventually combine. Over the summer, however, Continental has received formal investment proposals from two separate Texas-based investors, and from the loss-making Air Canada.

Only when this final shakeout is complete, the economy recovers and domestic traffic improves, may the fare wars abate and some semblance of profitability return. The travelling public will probably bemoan the day, but for the US carriers it cannot come a moment too soon.

PERSONAL VIEW

Blind faith in R&D

By David Sawers



It has become part of the conventional wisdom that the level of industrial spending on research and development (R&D) helps to explain international differences in industrial performance, and that one reason for the disappointing performance of British industry is that it spends less than its competitors on R&D.

But these beliefs are not supported by the evidence. The most appropriate measure of industrial effort devoted to R&D is industrially financed R&D as a percentage of industrial production. As the table shows, Germany and Japan are the only large industrial countries in which industry devotes a significantly higher proportion of its income to R&D than British industry. French and Italian industry have performed well while devoting less to R&D than does British industry. At the level of the nation, there is clearly no simple correlation between industrial expenditure on R&D and growth.

It is naive to imagine that national growth can be closely correlated with research expenditure. Growth depends more on increasing the efficiency with which resources are used than it does on increasing the input of such resources, including R&D. Research activity is only one way in which industry can improve its efficiency; and it is the results of this activity, not the level of expenditure on it that determines its contribution to the growth of industrial efficiency.

One explanation of the pattern of British industry's expenditure on R&D over the years could be that the results of its high expenditure in the 1960s proved commercially disappointing, and that the UK increased its expenditure in the 1980s when competition intensified.

Economists are tempted to use any available figures when comparing the economic performance of nations, even if the figures are not truly relevant. R&D statistics are among the less relevant figures. The most interesting questions are why companies and industries differ in the success with which they introduce new products and processes to increase sales and reduce costs, and whether changes to the hardware or to the organisation of marketing and production do more to improve efficiency.

Industrially-financed R&D as % of industrial production

	1967	1979	1990
France	0.74	0.98	1.30*
Germany	1.07	1.65	2.12
Italy	0.41	0.54	0.73
Japan	0.90	1.35	2.38
UK	1.34	1.17*	1.41
US	1.15	1.23	1.52

*Previous Year's figure
Source: OECD

Expenditure on one means of improving the hardware is not a very useful figure in this context. It is all the less useful because decisions concerning which efforts to improve hardware should be called R&D are partially subjective, so that international differences in R&D expenditure may well reflect differences in the interpretation of what it comprises.

Studies of the reasons for international differences in industrial performance therefore need to be analytical and qualitative rather than quantitative. Statistics can only provide a starting point for analysis, not the answers themselves.

It is depressing, given the limited significance of R&D expenditure, that the Democratic party of the US – along with the Labour party of the UK – places so much emphasis on tax incentives to encourage more spending on R&D.

A company's expenditure on innovative activity, including R&D, is largely determined by the technical opportunities for such activity in its industry and by the intensity of the competition it faces. Tax reliefs will reduce the cost of R&D, but this reduction is unlikely to increase significantly the expected return.

The British government is trying to encourage firms to spend more on R&D by promoting the publication of research expenditure by individual companies. But the government's efforts to make companies more conscious of their R&D expenditure are likely to cause companies to place more of their activities in this category, which is what the US tax credit appears to have done. This government intervention may therefore make everyone happy without changing anything but the work of the accountants.

If any government wants to improve the performance of its national industries, it should recognise that improvement will depend on getting more output from the available inputs, not on increasing the quantity of the inputs, whether R&D, investment or employment.

Performance is a matter of how firms are managed, which governments cannot directly influence. The most relevant role for government is to improve the quality of the labour input through its influence on the educational system, and to maintain a stable macro-economic climate. Attempts to increase the quantity of R&D demonstrate politicians' failure to analyse the problem and their desire to be seen to be doing something.

The author is an economic consultant.

Edward Mortimer

A chance to vent spleen

French voters may vote "No" on referendum day, but the morning after would be bleak

FOREIGN AFFAIRS

"Dix ans, ça suffit. Onze ans, c'est trop." (Ten years is quite enough. Eleven is too much.)

That was what the students chanted in Paris, in April 1969. They had failed to get rid of President Charles de Gaulle the previous year, on the 10th anniversary of his return to power. But in 1969 he foolishly held a referendum on a proposed reform (regionalisation) which did not seem to most people a burning necessity. That gave a wonderful opportunity for everyone who was fed up with him to vote against, without having to agree that they were for anybody or anything in particular.

Three years later his successor, Georges Pompidou, held another referendum, on the enlargement of the European Community to admit Britain, Ireland and Denmark. This move achieved its objective of causing a split in the opposition between the pro-European Socialists, already led by François Mitterrand, and the anti-European Communists, already led by Georges Marchais.

When Mr Mitterrand decided to hold a referendum on the Maastricht treaty on September 20, he clearly had the Pompidou precedent in mind rather than the de Gaulle one. Mitterrand too has succeeded in embarrassing and dividing an opposition which contains both fervent Europeans and fervent nationalists, with some of its leaders balanced between the two. He perhaps forgot that he, like de Gaulle in 1969 – and indeed like Mrs Margaret Thatcher in 1990 – has been in power for 11 years.

At least, unlike President de Gaulle, Mitterrand has not presented the issue as a personal vote of confidence in himself, or threatened to resign if it goes against him. He knows well that this would be seen by many as a reason to vote against it. "Our only hope of getting it through is for him to warn that in the event of a "No" vote he will stay," a senior civil servant said, half jokingly, in June. But it now looks as though that may not be good enough.

Last week I heard a French banker, a keen supporter of the president, wonder aloud whether Mitterrand might not yet save the situation by announcing, just before the poll, that he would resign in the event of a "Yes" vote, his mission of securing Europe's future and France's place in it being at last accomplished.

That was at the annual Aspen Institute seminar on "the US and the world economy", which this year was held in France. The European participants – drawn mainly from the banking and business elite but including senior politicians from France and Italy – were unanimous in hoping that Maastricht would go through, and by and large convinced their American interlocutors that they should hope that too. Parallels were drawn between European and North American integration even though (as one American speaker pointed out), the proposed North American Free Trade Association is a very different animal from the EC, Maastricht or no Maastricht.

Speakers from both sides of the Atlantic reassured each other, and sought to reassure Japanese and other parties present, that no "fortress Europe" or "fortress America" was in prospect, and that regional arrangements, if properly managed, were a step towards the global liberalisation of markets. Perhaps the most telling argument in favour of Maastricht, at least at the Aspen seminar, was that a French "No" vote would make an early breakthrough in the Uruguay Round of trade negotiations much less likely.

One influential Japanese speaker did observe dryly that both the EC (by excluding agriculture from its "Europe agreements" with Czechoslovakia, Hungary and Poland) and Nafta (by raising the local content requirement for imported cars and abolishing the *"maquiladora"* free trade zone) appeared to be violating the Gatt rules. But even he went on to argue that the future lay in a worldwide "federation" of regional groups, though he was unclear about the nature of the group to which Japan itself would belong.

At the same time, the European speakers were acutely aware of speaking for an elite which, irrespective of party labels, had largely forfeited the confidence of the man and woman in the street. The French were in a mood, as one of them remarked, to say not so much *"Non"* as *"merde"* to the entire political class.

The precise reasons for this mood are hard for the British observer to grasp. One is inevitably struck by the prosperous and well-organised appearance of France as compared with Britain. But obviously high unemployment in France has a lot to do with it, especially now that the static condition of the economy offers little hope of early improvement.

The danger of a referendum is that it enables all those who dislike a particular government, or a particular proposal, to gang together and defeat it without having to agree on an alternative. Some of the French politicians campaigning for a "No" vote – notably Mr Marchais and Mr Jean-Marie Le Pen, the National Front leader – are no more likeable than the establishment leaders calling for a "Yes"; But that does not seem to matter in a referendum, where victory would not automatically give them power.

Equally, there is much to dislike about the treaty itself. In June, I too gave way to an impulse of *Schadenfreude* and expressed the hope that Ireland would vote down Maastricht, suggesting that this would clear the decks for a better-designed European union.

Happily the Irish ignored that advice. Events since have confirmed their wisdom. Turmoil in the currency markets has shown how difficult it is for Europe to maintain a fixed exchange rate regime with separate currencies and divergent fiscal policies. Worsening carnage in Bosnia-Hercegovina and the continued isolation of Macedonia have shown how ineffective is European foreign policy so long as every detail of it has to be negotiated between 12 national governments on the basis of unanimity.

Damage limitation exercises after the Danish "No" vote have distracted the EC from the more serious agenda: the Uruguay Round, the accession of European Free Trade Association members, aid to eastern Europe, and the follow-up to the Rio Earth Summit.

Maastricht will not rectify these deficiencies overnight. The convergence necessary for monetary union will take until the end of the decade to achieve. The foreign policy machinery defined in the treaty will be only a slight improvement on the present one, and will in any case need to be recast in 1996 in the light of enlarged EC membership.

But a "No" vote from France, the country that has been in the vanguard from the very beginnings of European construction, would be a body blow to the entire enterprise. Nationalist demons would be unleashed throughout Europe, and much that has already been achieved would begin to unravel. In a world of nation-states, we might all be forced to choose between accepting German hegemony and forming an anti-German coalition: a choice which, for 40 years, French leaders have striven skilfully to avoid.

A "No" vote would be a body blow to the entire enterprise. Nationalist demons would be unleashed throughout Europe

OBSERVER

All change at Heineken

■ It's changing of the guard time at Europe's big brewers. Guinness's Sir Anthony Tennant steps down at the end of the year and now Holland's Freddy Heineken is reshuffling the pack at his family-controlled brewery.

But while the transition at Guinness is proceeding smoothly, Heineken, Europe's largest brewing group, is being more adventurous. It has appointed Karel Vuursteen, 51, a former chief executive of Philips' US lighting operation. He takes over the chairmanship of Heineken's executive board next April.

Last year Heineken hired an ex-Volvo man, Leendert Schouten, to run its finance side, and Vuursteen's promotion is an even clearer sign that Heineken is intent on shaking off its image as a cosy family-run company. Although the jazz-playing billionaire chairman retains considerable influence, outsiders believe that Vuursteen's appointment bears the hallmark of Gerard van Schaik, who took over from Freddy Heineken in 1989.

"In spite of van Schaik's gentle and informal manner, he is the one making the decisions", says one long time Heineken watcher. Under his short stewardship, Heineken has made more money even though it has sold less beer. However, van Schaik is a Heineken veteran, whereas Vuursteen has only been there just over a year.

Tennis date

■ Delegates to the Non-Aligned Movement conference have been making their entry to Jakarta in a variety of ways. The Iraqis arrived virtually unnoticed in an unmarked white airplane, while the Sultan of Brunei, the world's richest person, jetted in on his own jumbo.

While most heads of state are staying in the Jakarta Hilton, the Sultan has opted for the Grand Hyatt, where he is understood to have rented a mere four floors. However, The Hilton will be missing another well-known guest. Libya's Colonel Gadaffi has decided to stay at home. This will be good news for tennis players since it will free up court Number four which had been reserved for his tent.

Discounting

■ Sir Tom Cowie's failure to win control of rival motor dealer Henlys in a hard fought £32m bid could be put down to the fall in the stock market or sympathy for the under-dog on the part of Henlys' shareholders. But perhaps his choice of advisers played a part.

Sunderland-based Cowie employed Noble Grossart, the Edinburgh merchant bank, and Dickinson Dees, a Newcastle-based lawyer. It brought in an external PR firm halfway through the campaign. It estimates its costs at around £600,000 to £650,000 – "we drive a hard bargain" boasts Gordon Hodgson, Cowie's chief executive.

Henlys fees, by contrast, are in the £850,000 to £900,000 region. But then that may not be such a high price to pay if it helps secure the firm's continued independence.

Fergie factor

■ Meanwhile, another casualty of current market conditions has been a new issue for Sleepy Kids, the USM-listed animation company. Having bought the film and merchandising rights to the Duchess of York's "Budgie The Little Helicopter" books, Sleepy Kids has had a spot of bother refinancing itself.

It has only raised half what it hoped for through a share placing and its shares have gone to a discount. In spite of the adverse publicity surrounding the Duchess of York, Sleepy Kids is adamant that its disappointing performance has nothing to do with Her Royal Highness' recent troubles. It blames the perilous state of the markets.

However, John Bryan, the Duchess' financial adviser on the deal, must feel proud that this time he seems to be earning his keep.

Showtime

■ Brazil's diplomats are facing increasing difficulty matching their beleaguered President Fernando Collor's appetite for foreign travel – 18 foreign trips in 2½ years – with countries still keen to receive him.

However, Observer hears that Collor is insisting on putting in an appearance at the UN general assembly in three weeks time. By tradition Brazil provides the first speaker in the general debate and while Collor could have sent his foreign minister, his absence from the international stage would not have looked good back home.

In the event the UN's diplomatic gossips cannot help noting that the first speech at the general assembly will be given by a president facing impeachment, while the second speech will be given by a US president facing defeat.

Name game

■ The fallout from the break-up of Yugoslavia is having some strange effects in distant parts of the world. The Australian Soccer Federation, eager to stamp out occasional outbreaks of thuggery among spectators, has ordered clubs to drop their ethnic names, ignoring impassioned pleas for a reprieve.

The league says the ruling has provoked "a lot of emotion" among the clubs, many of which rely on support from specific ethnic minorities to pay the bills. The affected clubs include Sydney and Melbourne Croatia, South Melbourne Hellas, and Preston Makedonia.

The league has yet to decide whether Parramatta Melita Eagles derived its name from the Maltese community which provides its main support. However, Sydney Marconi will be allowed to keep its name, in spite of its Italian overtones. The league says the club was named after the inventor.

Last laugh

■ How do you make God laugh?

Tell him your plans for the future.

LETTERS TO THE EDITOR

Number One Southwark Bridge, London SE1 9HL
Fax 071 873 5938. Letters transmitted should be clearly typed and not hand written. Please set fax for finest resolution

'Visionary' approach to defusing the sterling crisis

From Mr Duncan Heenan.

Sir, The current sterling crisis once again points up the blindness of the City and the government to the "real economy". The long-term value of a currency is determined by the relative supply and demand for it, arising from the flow of trade. The "hot money" of capital flows and arbitrage reflects only the short-term exploitation of differences and bears little relation to the underlying strength of the economy in the longer term. To try to counteract long-term trends with short-term weapons is merely to store up bigger problems for the future.

A more visionary approach than fiddling with interest rates or criticising the exchange rate mechanism (ERM) would be to take the ERM quickly forward to the stage of a common European currency. Exchange rates within Europe would then cease to be a factor in economic management, and interest rates would be influenced by an institution with a proven record of nurturing the "real economy" – that is, the Bundesbank.

I fear that this view will be shared by few in the City, however, as too many of their livelihoods depend on the retention of these cumbersome national differences in a world which has outgrown them.

Duncan Heenan,
Spring Cottage,
21 Gotherington Lane,
Bishops Cleeve,
Cheltenham,
Gloucestershire GL52 4EN

Promotion of science beyond the media circus

From Prof Peter Day.

Sir, Your leader writer ("How to advance British science", August 28) is right to diagnose the task of expounding the scientific view of our world as too important and pervasive to encapsulate in one week's media circus each year, of the kind that traditionally accompanies the meeting of the British Association. The need to explain the world we inhabit is great, and our efforts to do so are continuous, but I am sorry that you succumb to the view that what is not universally visible in the media does not take place.

In particular, your leader writer's remarks do less than justice to an extensive and successful programme of lectures, master classes and teachers' workshops that fill our historic Lecture Theatre nearly every weekday throughout the school year. Since last autumn some 20,000 young people have had the chance to watch experiments and hear accounts of subjects as diverse as electric sparks and the movements in the earth's crust.

As to co-operation between the Royal Institution and the British Association, you need look no further than the contribution that we have traditionally made to the BA meeting itself in the form of a repeat performance of one of our celebrated discourses; this year the show put on by Michael and Wendy Gluyas on sound and music was a highlight of the week in Southampton, with 100 or so people being turned away from the door.

The RI and the BA co-operate closely, both in organising their own activities and in contributing, with the Royal Society, to the work of the Committee on Public Understanding of Science (COPUS).

What we do is in many respects complementary. Whether the over-riding cause that we both serve – of bringing the public to awareness of the power and limits of science as a way of making sense of our world – is best served in unity or diversity, is something we will both continue to keep in review.

Professor Peter Day,
The Royal Institution of Great Britain,
21 Albemarle Street,
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A proven model for schools

From D V Bennett.

Sir, I read with interest your editorial on education ("Exam results", August 20) and was curious as to why you choose the International Baccalaureate as a proven model.

May I suggest that you obtain some information concerning the European Schools in Europe and their already accepted and well-known European Baccalaureate.

Between 60 and 70 per cent of the students in these schools are children of those working in European or other international organisations in Europe. The remainder have parents who are not connected with the European/international civil service.

The first European School was started in Luxembourg in the 1950s. Today, their stringent examination requirements are appreciated by many nationalities throughout Europe. This system has the strong support of parents and students, unusual these days.

D V Bennett,
10a Avenue des Genets,
1640 Rhode St Genese, Belgium

Mrs Quayle and 'real' options for women

From Ms Eileen M O'Connor.

Sir, At the Republican national convention, Mrs Marilyn Quayle stated that though a career was a real option, "most of us love being mothers or wives, which gives our lives a richness that few men or women get from their professional accomplishments alone". ("Discordant tones over family values", August 21).

Has it occurred to Mrs Quayle that many women with, dare I say *careers*, lest I be labelled a feminist, do not have a choice as to whether or not they work? For some women it is an actual financial need.

Where is it written that being a mother, a wife and a professional are mutually exclusive?

Please do not speak for all of *us*, Mrs Quayle. You may represent a majority of the women on Walton's mountain, but I hardly think you represent all American women in 1992.

Eileen M O'Connor,
20 Edgewood Road,
Glen Ridge,
New Jersey 07028
USA

Effect of house price changes must be reconsidered

From Mr Brian Brown.

Sir, Edward Balls' summary of interest rates and inflation since 1925 (August 20) clearly shows the high real interest rates that have prevailed in the UK economy over the past decade.

Nevertheless, for most of the 1980s, for many people, and for a significant segment of the UK economy, the interest differential that mattered was the difference between base rate and the annual change in house prices.

On this measure, interest rates throughout much of the 1980s were negative. The change came at the end of that decade, as falls in house prices and increases in base rate led to an exceptional rise in "real" interest rates according to this measure – possibly the highest "real" interest rates in history.

Such considerations were largely irrelevant before the 1980s because consumer credit was not freely available against the security of houses and property or otherwise.

However, should we not now find a way of allowing for the effect of house price changes if we are to arrive at a realistic picture of what is going on?

Brian Brown,
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FINANCIAL TIMES
Wednesday September 2 1992

Florida storm disaster leaves US insurers facing record year for claims

Hurricane Andrew costs $7.3bn

By Nikki Tait in New York

US INSURERS expect to pay out an estimated $7.3bn in Florida as a result of Hurricane Andrew – by far the costliest disaster the industry has ever faced.

The figure is the first official tally of the damage resulting from the hurricane, which ripped through southern Florida last week. It is estimated that 275,000 people still have no electricity, and at least 150,000 are either homeless or living amid ruins.

President George Bush yesterday made his second visit to the region since the hurricane hit. He pledged the government would see through the clean-up "until the job is done".

Although there had already been some preliminary guesses at the level of insurance claims, yesterday's figure comes from the Property Claims Services division of the American Insurance Services Group, the property-casualty insurers' trade association and follows an extensive survey of the area by the big insurance companies.

Mr Gary Kerney, director of catastrophe services at the PCS, said the industry was expecting about 685,000 claims in Florida alone. It is reckoned that the bulk of the damage – over $6bn in insured claims – is concentrated in Dade County, a rural region to the south of Miami.

However, the final cost of Hurricane Andrew will be higher still. Yesterday's estimate does not include any projection for claims in Louisiana, which was also affected by the storm, although less severely than Florida. An estimate of the insured losses in this second state will be released later this week.

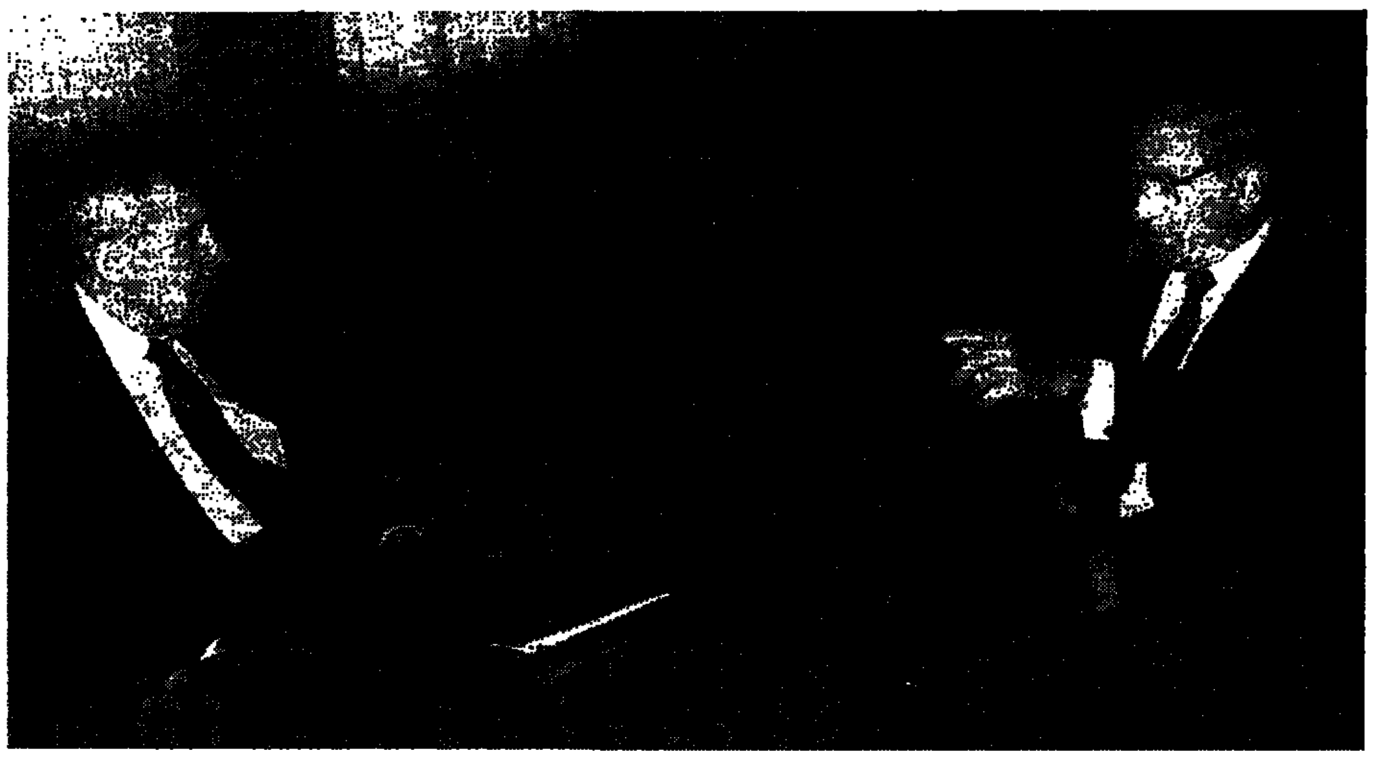
But on the Florida losses alone, Hurricane Andrew becomes the most costly insured catastrophe in the US. Hurricane Hugo, which hit the east coast in September 1989, cost the insurance industry around $4.2bn. The Oakland fire disaster, in California last year, cost $1.2bn.

By contrast, insurance claims resulting from Los Angeles riots earlier this year – the most expensive civil disturbance in the US – totalled just $775m.

Hurricane Andrew leaves US property-casualty insurers facing their worst single year for catastrophe losses. The LA riots and a series of tornadoes, wind and hailstorms in central states like Kansas, Oklahoma, and Iowa, had already produced insured losses of $3.9bn. With Hurricane Andrew added in, the total rises to $11.2bn.

This easily exceeds the record $7.6bn of catastrophe losses seen in 1989, when the industry paid out on both Hurricane Hugo and the Loma Prieta earthquake in California.

Wall Street, however, has reacted fairly calmly to the record losses expected from the hurricane, and insurers' shares – although lower initially – have been firming in recent days. The property-casualty industry is thought to have adequate reserves to cover the disaster.



Yugoslav prime minister Milan Panic (right) meets US congressman Franck Wulf in his Belgrade office yesterday

Panic backed by Yugoslav president

By Laura Silber in Belgrade

MR MILAN PANIC, beleaguered prime minister of the unrecognised Yugoslavia, was yesterday riding out a political crisis as the country's president Mr Dobrica Cosic swung his weight behind him.

Mr Cosic, a well-known Serbian writer, who, more significantly, is seen as the spiritual leader of all Serbs, said he was "surprised" by the no-confidence motion brought against Mr Panic by Serbia's governing Socialists.

The no-confidence motion, which could be voted on today, is seen as the beginning of a showdown in the power struggle between Mr Panic and Serbia's president Mr Slobodan Milosevic. If Mr Panic loses, it could mean an end to the peace process and the London conference, which has already lost momentum since it failed to produce any timetable for preventing the war spreading across the Balkan peninsula.

Mr Cosic is said to be prepared to back Mr Panic, the Belgrade-born US millionaire seen by many Serbs as the only figure who can rescue them from international isolation.

The no-confidence motion is being supported by 68 Socialist and ultra-nationalist Serbian Radical parliamentary deputies, who accuse him of betraying Serbian interests at the London Conference.

Mr Panic has called for an end to "ethnic cleansing," the Serb-inspired policy of forced separation of the region's minorities, has said he would recognise Croatia and Bosnia, and has vowed to start negotiations with ethnic Albanians in the Serb-controlled province of Kosovo, whose autonomy Mr Milosevic revoked.

Western diplomats said Mr Milosevic appeared to have miscalculated in trying to oust Mr Panic. "Cosic seems to realise it would seriously undermine their position in terms of the international community and sabotage the Geneva talks," said one. "Even Milosevic is capable of doing a cost-benefit analysis. He knows he stands to lose Montenegro."

Deputies from Montenegro, which with Serbia forms the truncated Yugoslavia, oppose the no-confidence motion.

Moslem victims locked up in cattle sheds, Page 2

Japanese politician resigns as illegal payments scandal widens

By Robert Thomson in Tokyo

AN INFLUENTIAL Japanese politician, Mr Kiyoshi Kaneko, governor of Niigata prefecture, resigned yesterday, leading to speculation over who will be the next to fall in the latest corruption scandal to hit the ruling Liberal Democratic party.

The downfall of Mr Kaneko, aged 60, apparently came after a tap on the shoulder from Japanese prosecutors investigating Tokyo Sagawa Kyukyo, a parcel delivery company alleged to be behind Y500bn ($4bn) in illegal payments to senior politicians.

Money was donated to win friends in high places, and prosecutors suspect that legislative favours were sought by the rapidly expanding company.

Last week Mr Shin Kanemaru, vice-chairman of the Liberal Democratic party, confessed that his political secretary had received Y500m from Tokyo Sagawa Kyukyo.

Mr Kanemaru – regarded as the party's powerbroker because of his ability to raise campaign cash – stepped down as party vice-chairman and said he would resign as leader of the LDP's largest faction, although the faction's members voted unanimously on Monday for him to retain that post "to prevent confusion in the party".

Mr Kaneko has denied illegally receiving Sagawa donations to support his 1989 election. However, his campaign workers have admitted taking at least Y100m and Japanese newspapers suggest that his office received Y300m.

The governor said it was "not appropriate" to comment on the allegations until the investigation was completed.

"For several days, I contemplated my future actions and decided to take political, ethical and all responsibilities for the confusion incurred in prefectural politics," Mr Kaneko told prefectural officials in Niigata, which is on the western coast of Japan.

Under the Political Funds Control Law, an individual can donate a maximum of Y1.5m to a politician, while companies capitalised at more than Y105bn are permitted to donate as much as Y100m to a party or politician over a year.

French officials back Mitterrand

Continued from Page 1

sonal record and that domestic politics should be left to the parliamentary elections next March.

There would be no point in his adding to to the present uncertainties by offering to resign. The important feature of recent polls was the growing number of voters who were undecided, rather than a slender and volatile margin against Maastricht, they added.

Mr Mitterrand called the referendum after the Danish vote against Maastricht in June, hoping that he would draw strong support from the French electorate for European union and split the opposition.

However, support for Maastricht has dwindled since then, from nearly 70 per cent in favour in early June to narrow majorities against the treaty in three out of six opinion polls last week. In the past few days, the balance has shown tentative signs of creeping back in favour, as the government has stepped up its previously muted pro-Maastricht campaign.

Of two polls published yesterday, one showed 53 per cent in favour and the other an even split. On Monday, another poll had come out with a 53 per cent majority. Both polls showed a decline in the number of undecided voters, to 23 per cent and 16 per cent respectively.

Dollar falls to new low

Continued from Page 1

indicator of where the market thinks base rates are moving, remained at about 10½ per cent. This indicated the market's perception that base rates, now at 10 per cent, are likely to move up by ½ a percentage point in the near future.

Treasury officials suggested that yesterday's new weakening in the pound against the D-Mark was largely as a result of dollar fragility. They continued to stress that Britain would do "whatever was necessary" to keep sterling within its current ERM parities.

European Community finance ministers, who are meeting this weekend in Bath, England, to discuss policy co-ordination, are thought to want to calm the currency markets as much as possible ahead of the September 20 referendum in France on European economic and monetary union. A large number of No votes against the Maastricht treaty could irretrievably damage moves towards Emu, and jeopardise confidence in the ERM, leading to large selling of weaker ERM currencies.

Yesterday an opinion poll for the television station TF1 and the national daily Le Figaro showed the French approving the Maastricht Treaty by 53 per cent to 47 per cent. Another poll released earlier in the day showed the two camps evenly split with 50 per cent of the vote each.

World Weather

		°C	°F
Ajaccio	S	23	73
Algiers	F	29	84
Amsterdam	C	15	59
Athens	S	31	88
Bahrain	S	35	95
Bangkok	F	33	91
Barcelona	S	24	75
Beijing	S	29	84
Beirut	S	31	88
Belfast	F	13	55
Belgrade	S	34	93
Berlin	C	12	54
Biarritz	F	17	63
Bombay	F	27	81
Bordeaux	F	19	66

		°C	°F
Boulogne	F	16	61
Brussels	S	15	59
Budapest	R	13	55
Buenos Aires	R	13	55
Cairo	S	35	95
Cape Town	C	16	61
Caracas	C	27	81
Casablanca †	S	24	75
Chicago †	S	11	52
Cologne	F	16	61
Copenhagen	R	14	57
Corfu	S	30	86
Dallas †	F	22	72
Dublin	F	14	57
Dubrovnik		-	-
Edinburgh	F	15	59
Faro	S	23	73
Florence	S	25	77

		°C	°F
Frankfurt	C	15	59
Geneva	F	15	59
Gibraltar	S	24	75
Glasgow	R	13	55
Helsinki	S	23	73
Hong Kong	S	33	91
Innsbruck	F	13	55
Inverness	R	14	57
Islamabad	F	36	97
Istanbul	S	30	86
Jakarta	R	30	86
Johannesburg	S	23	73
Lisbon	S	23	73
London	S	15	59
Los Angeles †	C	19	66
Luxembourg	C	12	54
Madeira	C	23	73
Madrid	S	21	70

		°C	°F
Majorca	F	26	79
Malaga	S	25	77
Malta	S	30	86
Manila	R	30	86
Melbourne	S	12	54
Mexico City	C	25	77
Miami †	F	27	81
Milan	S	25	77
Montreal †	C	11	52
Moscow	F	27	81
Munich	S	15	59
Nairobi	C	23	73
Naples	F	28	82
Nassau	F	32	90
New Delhi	S	34	93
New York †	S	17	63
Nice	S	25	77
Nicosia	S	30	86

		°C	°F
Oporto	S	20	68
Oslo	F	15	59
Paris	F	17	63
Prague	C	19	66
Reykjavik	F	8	46
Rhodes	S	29	84
Rio de Janeiro	C	33	91
Rome	S	28	82
Salzburg	F	12	54
S Francisco †	C	15	59
Seoul	R	23	73
Singapore	F	29	84
Stockholm	R	13	55
Strasbourg	F	15	59
Sydney	S	20	68
Taipei	C	33	91
Tangier	S	28	82
Tel Aviv	S	33	91

		°C	°F
Tenerife	F	24	75
Tokyo	S	31	88
Toronto †	C	12	54
Tunis	F	32	90
Valencia	S	21	70
Venice	S	26	79
Vienna	R	12	54
Warsaw	C	18	64
Washington †	S	18	64
Zurich	C	14	57

Temperatures at midday yesterday
† Noon GMT temperatures
C - Cloudy Dr - Drizzle
F - Fair Fg - Fog H - Hail
R - Rain S - Sunny
Sl - Sleet Sn - Snow
T - Thunder

THE LEX COLUMN

Housing subsidence

One might have thought that the market would be impervious to shocks from the housebuilders by now. But yesterday's 42 per cent fall in interim profits from Persimmon clearly caught investors on the hop. The company's own shares dived 25p to 148p on the news, while Barratt Developments (down 16 per cent to 41p) and Wimpey (down 11 per cent to 85p) were the biggest casualties elsewhere.

Six months ago it would have been unthinkable for a quality regional player like Persimmon to insert a health warning about the final dividend. While there seems no need to contemplate a cut at this stage, the statement underlines the uncertainties which the housing market faces for the rest of the year.

The real message contained in yesterday's numbers is the risk of chasing volume in current market conditions; Persimmon clearly geared up for a buoyant first quarter which never happened, and has only managed to sell fractionally more houses than in the first half of 1991 at the expense of higher overheads. Stocks and work in progress are up almost a fifth, reflecting a 32 per cent increase in the number of development sites. Persimmon, however, has a relatively cheap land bank and comfortable balance sheet, and managed to maintain its average selling price in the period: one can only speculate on the plight of competitors dashing for cash to keep the bankers happy, rather than growing volume as a stated objective of medium term strategy.

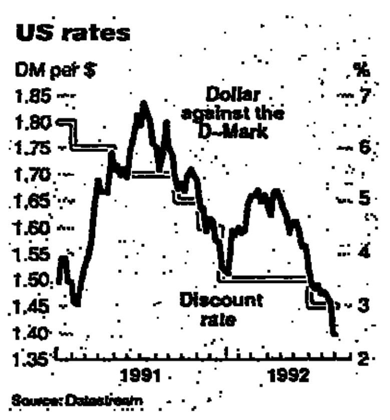
Persimmon will hardly lose its premium rating as a result of yesterday's disappointment; the question, once again, is whether the whole sector is correctly priced.

UK takeovers

Contested bids such as Redland/Steetley and TI/Dowty mostly squeaked through in the first half of 1992. But with yesterday's victory by Henlys in the battle of the motor traders – following hot on the heels of Manders' successful defence against fellow paint maker Kalon – the predators' lot is not proving an easy one. Obviously it is rash to make judgements on the basis of just two tiddlers, and there are particular difficulties in making unwanted bids for smaller companies. The explanation, though, may go beyond relative management merits or even the lack in both recent cases of a full cash alternative.

The way in which the falling stock market has tended to erode bid premiums has certainly been one factor in the failures. Another may be the increasingly uncertain outlook for earnings, and therefore the difficulties for institutions of assessing the fairness of offers.

FT-SE Index: 2298.4 (-14.2)



Source: Datastream

Dollar

Sterling, the franc and the lira may all be under pressure, but it is the dollar which is suffering most against the D-Mark. In deciding whether the current difficulty is one of dollar weakness or D-Mark strength, the Americans can with some justice point the finger at the Germans, not least because the dollar's recent fall against a basket of currencies has been modest. Those who enjoy historical irony might see present circumstances as a German reprise of Reaganomics; a large economy has high government spending but its independent central bank follows a tight monetary policy. The result is upward pressure on interest rates everywhere.

Thus conventional wisdom has the gap between US and German rates as a primary cause of the weak dollar. To the extent that this is true, it is difficult to see what the Americans can do about it. Raising interest rates by 1 per cent would probably kill the stunted US recovery, but it would do little to narrow the interest differential with Germany and intervention is at best a tactical tool. At any rate, the interest gap is largely priced into the market.

What may be more important for the foreign exchanges at the moment are renewed worries about the health of some American banks given sluggish economic growth, and the age-old rationalisation of political uncertainty as a bearish force.

Of course, as some economists never tire of saying, the dollar is cheap when purchasing powers are compared. Unfortunately, that situation can persist for a very long time. A market perception that the momentum of interest rates had altered might do the trick, but it is a little too early for that. Though it is unlikely, the Federal Reserve might even cut rates if recovery falters further. By contrast, the threat of higher German rates still exists. Eventually, it may be the resolution of the electoral struggle which gives speculators an excuse to take the dollar higher.

Power prices

National Power and PowerGen have an enlightened self-interest in focusing attention on the nuclear levy and its impact on industry's electricity bills. Their regulator is again asking questions about pool prices, although he found no evidence of price fixing last year. The generators are also locked in sensitive talks with British Coal over long-term coal supply contracts. A worthy argument about who bears the cost of nuclear power provides a welcome diversion.

Industry, though, is certainly right to worry about energy costs. Subsidies in the form of cheap coal – and the low rate of return demanded of some regional electricity boards – have been lost since privatisation. In a business like chemicals the cost of power is a key component in competitiveness since many other input prices are fixed on world markets. It is difficult to prove UK manufacturers are operating at a disadvantage, but the nuclear levy is is the one component of power pricing equation still in the gift of government and an obvious target for lobbying.

But the attention of the market, and of big electricity consumers, is unlikely to be switched for long from the issues of competition and coal. Energy users yesterday welcomed PowerGen's proposals on the levy, but would no doubt also applaud a full enquiry into pool prices. Industry will also be suspicious of paying any form of hidden subsidy to British Coal through higher electricity prices.

Both issues have to be resolved if the generators are to continue to justify a lower yield than other privatised utilities.

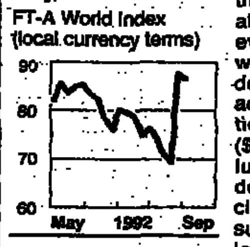
INSIDE

European insurers cut back operations

Two leading European insurance companies are to scale down parts of their international insurance and reinsurance business. Internationale Nederlanden, the Netherlands' biggest insurer, is to stop writing new business at its UK-based Orion subsidiary, while Skandia, Sweden's largest insurer, said it was seeking to sell its US and European reinsurance businesses. Page 14

Helpful leaks lift Tokyo

Japan
FT-A World Index
(local currency terms)



Last week demonstrated the Japanese market's ability to anticipate events; and showed what the prospect of determined government action can do for equities. Japan's Y10,700bn ($87bn) economic stimulus package was not detailed until after Tokyo closed last Friday but a succession of helpful leaks left the FT-Actuaries Japan index up 9.9 per cent last week. Back Page

Bitter harvest for apple growers

UK apple growers, busy picking a bumper harvest, have reason to be worried about the price they can expect for their crop. A large quantity of apples from the southern hemisphere is heading for the market and this year's EC apple crop is around 10m tonnes, compared with only 5.7m last year. Page 20

Slow freeze-out of CFCs

The slow progress of domestic refrigerator makers towards eliminating dependence on CFCs is a story of commercial hedging in the face of, some say, minor technical difficulties and major economic uncertainties. Page 19

Tomson Pacific investigation

Hong Kong's Tomson Pacific Group is being investigated by the colony's financial secretary. The securities and futures commission recommended the investigation into "a number of specific transactions" by Tomson Pacific and its 33.4 per cent owned associate World Trade Centre. Page 15

Skanska appoints president

Skanska, Scandinavia's biggest construction group, has appointed a new president for its finance subsidiary. Page 14

Market Statistics

Companies in this issue

Chief price changes yesterday

FRANKFURT (DM)

Rises			
Heidelb Zem	877	+	27
Springer Axel	606	+	28
Sud Chemie	490	+	15
Falls			
Asko Prf	418	–	32
Holzmann Ph	815	–	15
Linde	743	–	11

NEW YORK ($)

Rises			
Delta	52½	+	2½
USAir	13½	+	½
Falls			
Armco	51¾	–	½
Atlantic Rich	114⅜	–	1¼
Lancer	28¼	–	½
Texaco	65⅜	–	⅜

PARIS (FFr)

Rises			
Air Liquide	780	+	10
Immobanque	570	+	10
Falls			
Accor	521	–	15
Axa	709	–	20
Gascogne	411	–	22
UAP	335.6	–	12.9

TOKYO (Yen)

Rises			
Clarion	835	+	100
Crown	670	+	100
Dai Nippon Cons	1150	+	140
Kurabo Inds	516	+	80
Toyo Tire	329	+	80
Falls			
Yahagi Iron	241	–	29

LONDON (Pence)

Rises			
ADT	400	+	11
Brit Aerospace	205	+	7
Dewhirst	40	+	4
Eurotunnel Uts	386	+	11
Haynes Publg	198	+	8
MTM	73	+	4
News Corp	879	+	54
Falls			
Amberia	172	–	13
BET	104	–	10
Barratt Devs	41	–	5
Blob Circle	151	–	7
Courtaulds	412	–	17
Eurocopy	32	–	7
Heelys	62	–	5
Lucas Inds	78	–	5
MB-Caradon	213	–	12
Misys	259	–	14
Norcros	72	–	9
Persimmon	148	–	25
Rank Org	490	–	14
Rugby	162	–	6
Trafalgar Hse	43	–	3
Wilson Bowden	232	–	20
Wimpey (G)	85	–	12

Dai-Ichi Kangyo Bank in shake-up

By Robert Thomson in Tokyo

DAI-ICHI KANGYO Bank, Japan's largest commercial bank, yesterday began a restructuring intended to show that the banking industry is worthy of the public support on offer from the Japanese government.

The bank will cut directors' salaries by 5 per cent, reduce entertainment expenses by 20 per cent over the next year, and send a 66-point cost-saving checklist to each of its 400 domestic branches and 69 overseas offices.

DKB insisted that the restructuring be viewed as "positive" and not as a sign that the bank is in financial difficulty. The action is likely to be followed by other banks, whose troubles with non-performing property loans had undermined confidence in the financial system.

But DKB's cuts do not go deep and may not increase community approval for plans announced by Mr Kiichi Miyazawa, the prime minister, to provide public funds to liquidate banks' non-performing loans. The proposal has been condemned by Japanese newspaper commentators and some opposition politicians, who argue that the banks should trade their way out of trouble.

Japanese banks' problems stem from the turmoil in financial and property markets, and from their own rapid expansion of branches and loans during the late 1980s. At DKB, for example, there were 26 business divisions a decade ago, compared with 46 divisions now.

However, the bank will not lay off staff, though it plans to reduce the annual intake from 500 to 400 students next April. It will "review" the performance of its branches, while not necessarily closing the unprofitable.

DKB's reluctance to sack reflects both the Japanese custom of lifetime employment and the enduring belief that institutions will weather these difficult times without dramatic action.

The banking industry has been drawing up plans to form a corporation to purchase bad loans or land held as collateral for bad loans. The scheme needs government support to succeed, although Mr Miyazawa has not made clear what form the assistance would take.

Areas targeted by DKB for cost cuts include travel, with executives requested to take economy-class seats on aircraft and expected to show "the spirit of restructuring".

Michiyo Nakamoto on why Europe's semiconductor makers are changing course

Looking for smaller worlds to conquer

Worldwide semiconductor market

Source: Dataquest Europe	Country	Rank 1991	Rank 1990	Revenue ($m) 1990	Revenue ($m) 1991	1991 market share
NEC	Japan	1	1	4,322	4,774	8.0%
Toshiba	Japan	2	2	4,202	4,579	7.7%
Intel	US	3	5	3,171	4,019	6.7%
Motorola	US	4	3	3,539	3,802	6.4%
Hitachi	Japan	5	4	3,516	3,765	6.3%
Texas Instruments	US	6	7	2,574	2,738	4.6%
Fujitsu	Japan	7	6	2,599	2,705	4.5%
Mitsubishi	Japan	8	8	2,108	2,303	3.9%
Matsushita	Japan	9	10	1,826	2,037	3.4%
Philips	**Netherlands**	10	9	1,955	2,022	3.4%
National Semiconductor	US	11	11	1,653	1,602	2.7%
Samsung	Korea	12	13	1,315	1,473	2.5%
SGS-Thomson	**Italy/France**	13	12	1,441	1,436	2.4%
Sanyo	Japan	14	15	1,196	1,362	2.3%
Sharp	Japan	15	16	1,194	1,318	2.2%
Siemens	**Germany**	16	14	1,204	1,263	2.1%
Advanced Micro Devices	US	17	17	1,053	1,226	2.1%
Sony	Japan	18	18	1,010	1,196	2.0%
Oki	Japan	19	19	954	981	1.6%
Rohm	Japan	20	21	759	934	1.6%

Europe's semiconductor manufacturers are abandoning their long-held ambitions of competing with the industry's leaders to concentrate on more specialised areas, which they believe offer a better chance for success.

Faced with rising investment costs and increasing competition in their home market by foreign groups setting up bases within the EC, the big three Europeans, Philips, SGS-Thomson and Siemens, have been reassessing their strategies for the 1990s.

They are focusing their portfolios on specific products in which they have recognised strengths, rather than trying to tackle the high-volume standard product areas which are the battlegrounds of the leading US and Japanese manufacturers.

"There was a time when semiconductor companies tried to do almost everything," says Mr Heinz Hagmeister, chief executive officer of Philips's semiconductor division. "But that time is gone." From now on, he believes, even the largest semiconductor companies will have to be more selective.

That belief has led Philips to leave the highly competitive market for standard products such as memory chips and focus its energies on more specialised items for the consumer, telecommunications, industrial controls and automotive industries.

Siemens, which earlier this year decided to reduce involvement in memory chips production, also says it is no longer necessary to be a large participant in the market for standard products such as memories. "Standard products are led by major players. To compete against them is a silly idea," says Mr Klaus Knapp, a senior director at Siemens.

Siemens will use the technology gained from its involvement in memory chip development to manufacture application specific integrated circuits (ASICs) and logic chips, which offer more stable revenue and better margins.

SGS-Thomson has also been concentrating on systems and application-specific products for the consumer, telecommunications and automotive industries.

Until last summer Europe's semiconductor manufacturers had been talking about forming a "European champion" to compete with the large US and Japanese groups in an industry expected to be worth as much as $200bn by the end of the decade.

The idea of merging the operations of Europe's large semiconductor manufacturers was "a dream of consultants", Mr Hagmeister says. The companies would have to deal with their own problems before there could be any serious co-operation.

The driving force behind this change has been the need to generate profits. Europe's semiconductor manufacturers can no longer afford to be in markets where they are clearly behind their US and Japanese competitors – such as memory chips and microprocessors – where high investment costs and intense competition mean only the fittest can survive. Siemens has suffered big losses from its involvement in D-Rams. "For every D-Ram we sell we are making a loss," the group says. Its semiconductor division last year lost DM500m ($358m) on sales of DM2bn.

The conventional wisdom that a company had to be in all the main product areas to attain a leadership role is being challenged by the examples of successful companies which have risen to prominence on the strength of one or two leading products. Intel of the US, which has carved a dominant in the microprocessor market, is a key example.

While most of the world's leading semiconductor manufacturers have been hit by recent difficult market conditions, European companies are particularly hard-pressed to identify a strategy for survival, if not success.

European companies are medium-sized operations in an industry increasingly polarised between the large, broadly based companies and the smaller, specialised niche players.

As such, they occupy what Siemens has called the "instability zone" where companies that are too small to generate sufficient revenue for growth but too big to be niche players sit uncomfortably pondering their future.

Therefore, by focusing on applications-oriented products the Europeans have probably increased their survival chances.

Concentrating on core businesses eliminates the enormous risks they would have faced in huge growth markets such as memory chips. Because of the huge investments needed and the characteristic boom-to-bust swings, "trying to compete in these markets may kill your company", says Mr Mike Glennon at Dataquest, the technology consultancy.

At the same time, because these products depend on close collaboration between supplier and user, the Europeans believe they are better placed than their foreign rivals in supplying them to leading European companies in the consumer electronics, telecommunications and automotive industries.

Meanwhile, the areas where the Europeans are developing expertise could become more relevant in future as technology drivers, says Mr Matthew Whitcombe of the Computing and Electronics Group at Coopers & Lybrand Deloitte, the management consultants.

Consumer electronics itself is not expected to expand its share of about 21 per cent of the entire semiconductor market, which Dataquest forecasts will go to $88bn by 1995. However, Philips for one has been working on applications for multimedia, the convergence of consumer electronics and computers, which is expected to be a big growth area within consumer electronics. In the long term multimedia applications are also expected to be the driver for electronic data processing as well.

Meanwhile, Siemens has expertise in automotive applications, which was the fastest growing market sector last year.

SGS-Thomson has strengths in communications which Dataquest forecasts will grow from 13.9 per cent to 15.1 per cent of the market in 1995.

In spite of these promising signs, unless European semiconductor manufacturers look outside of Europe to the larger markets of the US and Japan, the crucial step beyond survival towards growth may still elude them.

SmithKline Beecham to restructure R&D

By Clive Cookson, Science Editor

SMITHKLINE Beecham, the Anglo-US pharmaceutical group, is to to make far-reaching changes in research and development. They involve 150 redundancies among UK research staff, a £200m ($398m) investment in new R&D facilities and, most surprisingly, withdrawal from long-term research in gastro-intestinal drugs – the field that provided its best-selling product, the ulcer medicine Tagamet.

The "strategic realignment" of R&D is the final phase of cost cutting and rationalisation that followed the merger between Beecham of the UK and SmithKline Beckman of the US in 1989. Savings in manufacturing, marketing and administration have already cut the group's workforce by about 2,000 and helped raise pre-tax profits 18 per cent a year.

"Resources must be focused on drug discovery with the highest potential for return," said Dr George Poste, R&D chairman. "As a result SB has decided to discontinue several research programmes."

The most striking casualty is gastro-intestinal drug discovery, which led to Tagamet, with sales exceeding $1bn in each of the past six years, and more recently to Kytril, the anti-nausea drug launched last year as a competitor to Glaxo's Zofran.

"We feel that basic research in this area has proceeded more slowly than in others and it's more difficult to identify rational candidates for drug discovery," said Dr Poste. But he emphasised that development work on SB's existing gastro-intestinal compounds would continue.

The realignment will leave SB with drug discovery programmes in five areas: central nervous system; heart and lungs; anti-infectives; inflammation and tissue repair; and vaccines.

UK R&D sites will be cut from eight to six. SB will close its medical offices in Reigate, Surrey, and the small research facility at its antibiotics factory in Worthing, Sussex. The 150 redundancies – including scientists, technicians and office staff – will be spread across the eight sites.

SB will continue to divide its R&D effort equally between the UK and US.

Dr Poste said SB planned in future to devote about 15 per cent of pharmaceutical sales to R&D. This year's R&D budget is about £410m. The shares closed 15p down yesterday at 395p.

Boeing poised to increase international collaboration

By Paul Betts, Aerospace Correspondent

BOEING, the world's largest manufacturer of commercial jets, is poised for greater collaboration with other international aerospace companies, Mr Philip Condit, the US company's new president, said yesterday.

Boeing has been a "go-it-alone" company, but Mr Condit said increased international collaboration would become an important thrust of company strategy.

Mr Condit, aged 51, was elected Boeing president on Monday and is widely tipped to take over as chairman when Mr Frank Shrontz retires in four years.

Boeing is collaborating with the three Japanese aerospace companies (Kawasaki Heavy Industries, Fuji Heavy Industries, and Mitsubishi Heavy Industries) on the 777 twin-engine widebody airliner programme.

Boeing was also collaborating in military programmes with Lockheed and General Dynamics on the US F-22 Advanced Tactical Fighter and with Sikorsky on the Comanche helicopter.

Mr Condit takes over at a difficult time for Boeing and the industry. The military business is under pressure from government defence cuts and Boeing faces challenges on the commercial front, including launching its 777 airliner in a depressed market.

However, Mr Condit said the 777 programme was "in good shape". He said Boeing's priority was to have "a very aggressive customer focus".

The company has announced monthly production cuts of its 737s from 21 to 14 a month from next month. But Mr Condit said further cuts would depend on the economic outlook during the next nine months.

He said he was confident about long-term prospects for air transport and commercial aircraft demand, although it was extremely difficult to forecast when the recovery would begin.

Mr Condit said Boeing, with a 55 per cent share of the world commercial airliner market, intended to remain a significant player in the military business.

He welcomed the recent US compromise with the European Commission on Airbus subsidies as "an important step" in the dispute over commercial aircraft trade. But he added that Boeing in the longer term wanted to see the European Airbus consortium operate "on a completely privatised basis".

Difficult journey, Page 10

Additional UK share indices planned

By Peter Martin, Financial Editor

PLANS for new UK stock market indices have been prepared by a working party including representatives of the FT, the London Stock Exchange, the actuarial profession and market participants.

The new indices would complement the FT-SE 100 index and the FT-Actuaries All-Share index, which are expected to remain the UK market's principal real-time index and the main end-of-day performance benchmark, respectively.

The new indices would cast more light on the performance of the market, particularly of second-rank UK companies.

They would also allow investors to monitor the performance of individual industry sectors minute-by-minute during the day.

A broad measure of agreement on the plans has been reached, but some details remain to be settled. A formal announcement is expected in the autumn.

Among the proposed new indices are:

- The FT-SE Mid 250, covering the 250 companies that rank below the FT-SE 100 in size. This would be a real-time index containing companies with market capitalisations of roughly £150m ($300m) to £1bn. These are typically substantial national companies, rather than the UK-based international companies that make up most of the FT-SE 100.
- FT-SE Actuaries 350 Industry Baskets, based on the top 350 UK shares (the FT-SE 100 plus the FT-SE Mid 250). Industry classifications would be based on the system used in the FT-Actuaries All-Share index.

The industry baskets would be calculated in real time.

The indices have been planned in part to allow for the creation of derivative instruments, such as futures and options. In practice, these are likely to be based on the FT-SE Mid 250 and the more important industry baskets.

Mr Richard Lambert, editor of the FT, said yesterday: "The new indices will be part of a coherent family jointly sponsored by the FT, the London Stock Exchange, and the Institute and Faculty of Actuaries.

"We have co-operated closely in the past, and are pleased that we will shortly be in a position to strengthen and extend the index coverage of the UK market.

"These arrangements will also enhance the role of the All-Share index, the principal benchmark of UK portfolio performance."

Two European insurers to scale back operations

By Richard Lapper in London and David Brown in Amsterdam

TWO LEADING European insurance companies are to scale down parts of their international insurance and reinsurance business.

Internationale Nederlanden, the Netherlands' biggest insurer, is to stop writing new business at its Folkestone, UK-based Orion subsidiary, which specialised in aviation and marine insurance in the London market.

Skandia, Sweden's largest insurer, announced that it was seeking to sell its US and European reinsurance businesses.

ING and Skandia are concentrating on the development of less volatile personal lines (home and motor) and life insurance.

The ING subsidiary, Orion, has been badly hit by intense rate competition and heavy losses in the London marine and aviation market. Orion, acquired by its Dutch parent in 1976, had been a market leader in aviation business.

London market operations are being closed although some of the group's 70 staff will be retained to handle claims on business that has already been written.

ING said that it is negotiating with a potential buyer the sale of Orion's personal lines and health insurance business.

After investment income losses amounted to £48.8m ($97m) in 1990 (compared with a premium income of £97m) and to £26.3m in 1991 (compared with a premium income of £108m). In 1990 claims on marine business exceeded premiums by over 100 per cent.

ING said that the company "was too small in relation to the size of the UK market. We have been trying to make the company profitable for some time. But analysis showed it was too small to be viable."

Skandia, which has been hard hit by losses in its investments in real estate, said it is "exploring possibilities to sell its New York-based reinsurance operation through an initial public offering".

The group is looking to find an industrial buyer for its Stockholm-based reinsurance operation (Reinsurance Europe & Overseas), following the breakdown of plans to sell the group to stricken Norwegian insurer, Uni Storebrand, earlier this year.

"The current reinsurance activities will thus no longer be part of our core operations," said Mr Bjorn Wolrath, chief executive.

Skandia reported an operating loss of SKr344m ($67m) last week.

Swiss armaments group back in black

By Ian Rodger in Zurich

OERLIKON Bührle, the Swiss armaments, engineering and shoe retailing group, returned to profit in the first half for the first time since 1985.

Net profit was a nominal SFr5.3m ($4.24m) on sales up 10 per cent to SFr1.6bn. In the full year for 1991 the group recorded a SFr187m loss and incurred restructuring costs of SFr700m.

Mr Hans Widmer, the chairman who was brought in last April to rescue the group, forecast that cash flow in the full year would reach more than SFr200m and the group would be in profit.

Net debt stood at SFr1.72bn at the end of June, down SFr59m since the end of last year, and the manpower has been cut from 26,437 at the beginning of 1991 to 16,487.

Mr Widmer said the group's focus had shifted to rebuilding its businesses. New orders in the first half in the civilian businesses were up 9 per cent to SFr1.3bn and the Contraves military business, specialising in anti-aircraft missile systems, received a further SFr1bn in orders.

Among the group's divisions, the Contraves business remained the biggest loss-maker with a SFr75m operating loss on sales of SFr597m in the first half, attributable mainly to a contract in Canada.

Sales of the Bally shoe subsidiary were up 9 per cent to SFr546m and operating profits were SFr33m.

Balzers, the vacuum pump and anti-wear coatings group, had a SFr42m operating profit on a 7 per cent rise in sales to SFr230m.

Investors welcome changes at SBC

Ian Rodger looks at events on the inside of an outsider from Basle

SWISS BANK Corporation officials said yesterday that the top level executive changes planned for next spring were merely "normal". However, investors felt this was an understatement and drove the shares higher.

This was against the trend that prevailed for other leading banks and helped recover some of the ground that SBC's shares have lost this year.

In Swiss bank management practice, the chairman of the executive board has overall executive responsibility, so the appointment of Mr Georges Blum, a tough commercial banker, to this post is the most important of the changes. But some analysts suspect that the thoughtful Mr Walter Frehner, who moves up to become chairman of the supervisory board, will be more active than Mr Franz Galliker has been.

"I think they are trying to impose stricter quality control over lending," says Mr Hans Kaufmann, banking analyst at Bank Julius Baer in Zurich. Mr Beat Philipp, banking analyst at Bank Vontobel in Zurich, foresees a renewed concentration of power at the centre.

Historically, SBC is the most international of the Swiss banks, but it has had more than its share of problems overseas in the past few years. Apart from large problem loans in the US and UK, its acquisition of the second division brokerage Savory Milln in London in 1986 turned out to be an expensive failure. The same could be said for its lunge into the French market with its purchase of control of Banque Stern in 1987.

Walter Frehner: expected to be more active

On the other hand, the association SBC formed with the Chicago derivatives house, O'Connor Partners, last year has so far been a resounding success, and the bank has put a high priority on developing its international swaps and options business.

Then there is image. Among the three big Swiss banks, SBC has always seemed the hardest for analysts to understand. Union Bank of Switzerland is the predictable but steady giant with an aura of military might. Crédit Suisse is the bank of the Zurich establishment which has transformed since the early 1970s into a shrewd global investment bank. But SBC, the outsider from Basle, has, say analysts, no clear image or personality and seems to change strategy with disquieting frequency.

These weaknesses appear to be reflected in SBC's share prices. At yesterday's SFr243 close, the bearer shares were only about 6.5 times estimated 1993 earnings and yielded more than 6 per cent. "Everyone is too negative on this bank," said Mr Kaufman, pointing out that it has made very good profits in the past two years in spite of having to make large loan loss provisions.

That is probably the message that SBC executives, who meet financial analysts in London today, will try to put across.

Tabacalera 4.8% ahead at half time

By Tom Burns in Madrid

TABACALERA, Spain's state-controlled tobacco manufacturer and distributor which has a near-monopoly status in the domestic market, raised its first-half pre-tax profits by 4.8 per cent to Pta9.7bn ($106.6m).

Income from tobacco sales and also from monopoly revenue earners such as state paper, including postage stamps, increased by 5.3 per cent in the first six months of 1992 compared with same period last year.

Alusuisse-Lonza declines but expects full-year rise

By Ian Rodger in Zurich

ALUSUISSE-LONZA, the Swiss aluminium, speciality chemical and packaging group, said net income tumbled 23 per cent in the first half to SFr85m ($67.4m) but forecast a 20 to 40 per cent rise in net income for the full year.

Mr Theodor Tschopp, chief executive, said the group, formerly concentrated in aluminium, was seeing the first fruits of its recent diversification.

The group had been able to increase operating margins in its chemicals and packaging divisions, compensating for falls in the aluminium division due to oversupply in world markets. Group sales rose 4 per cent to SFr3.3bn, with aluminium sales up 2.2 per cent to SFr1.8bn. Chemical sales rose 5.5 per cent to SFr791m. A-L Packaging sales were up 6.1 per cent to SFr655m.

Mr Tschopp said no upturn in market conditions was expected in the second half in the primary aluminium and other commodity sectors. The large forecast improvement in profit for the full year would be realised mainly due to a poor result in last year's second half.

First-half reverse for Wallenberg company

By Robert Taylor in Stockholm

INVESTOR, the Swedish investment company controlled by the Wallenberg family, reports a SKr2.08bn ($404.7m) first-half profit (after financial items), which compares with SKr2.64bn for the same period of 1991.

The company's share portfolio was valued at SKr22.1bn, of which SKr6.82bn derived from its stake in Astra, Sweden's pharmaceuticals conglomerate and SKr3.65bn from Stora, the largest forestry group in Europe.

Investor also announced that Saab-Scania, the Swedish vehicle and aerospace group which it owns outright, achieved an increase in its first-half profits (after financial items) to SKr1.26bn from SKr564m. Net sales fell by 8 per cent over the same period to SKr13.29bn from SKr14.52bn.

There was a substantial improvement in the group's order book to SKr22.9bn from SKr12.9bn, mainly due to the orders received for the JAS 39 Gripen fighter aircraft. The return on capital employed rose to 12.1 per cent from 9.4 per cent.

Saab-Scania expects second-half results to be lower than for the first half and overall profits for 1992 to be at the same level as last year when the group made SKr1.71bn. The group's prediction is more pessimistic than the one it made in the spring.

The group suffered a 25 per cent drop in aircraft sales to SKr1.77bn from SKr2.37bn. The order book increased to SKr22.4bn from SKr11.7bn, of which SKr6.6bn was for civilian aircraft and SKr15.8bn for its military aircraft. Its combitech division experienced a slight decline in orders to SKr1.07bn from SKr1.18bn.

Incentive, the Wallenberg dominated engineering based industrial company announced a slight drop in its first-half profits (after financial items and including its associated companies) to SKr654m from SKr671m.

Lufthansa confirms jobs and cost-cuts programme

By Andrew Fisher in Frankfurt

LUFTHANSA, the loss-making German national airline, hopes to improve its results by DM700m ($500m) a year from 1993 through improved marketing and more flexible pricing, as well as making big savings through the job and operational cuts agreed this week.

Its supervisory board approved the employment and cost-cutting programme put forward by Mr Jürgen Weber, chief executive, to haul the airline out of the red. Lufthansa made a pre-tax loss of DM542m in the first six months of this year, 66 per cent higher than in the same period of 1991.

The airline confirmed its plan to shed 6,000 people over the next two years after 1,800 in 1992. This will be a cut of 15 per cent on the 50,000 at the airline, although the whole group has a labour force of some 60,000. Cuts in management would be especially deep. The total impact of its measures could be up to DM3bn a year from 1995.

Lufthansa officials said concessions by the unions, including a one-year pay freeze and more flexible pay structures and working conditions, represented a marked change from the high wage demands made throughout industry earlier this year.

The airline reached agreement with its two main unions, the DAG white collar union and the ÖTV public sector union, on Monday night.

It said the favourable pay terms meant its new Lufthansa Express domestic operation would be a division of Lufthansa and not a separate company with lower pay levels than the rest of the airline. It threatened to take the latter move if unions did not go along with Lufthansa's requests for wage savings.

Lufthansa's financial situation is more acute than at most big German companies. It must now retrench in line with the tougher economic and airline environment. Mr Weber said operating losses this year would be around DM1.2bn.

Mondadori lifts parent company profits

MONDADORI, the Italian publishing group controlled by Mr Silvio Berlusconi's Fininvest concern, confirmed its continuing recovery by raising parent company profits before tax and extraordinary items to L22bn ($20.4m) in the first half of this year, against a loss of L13.7bn in the same period last year, writes Haig Simonian.

Results at subsidiary companies, which had lost L9.2bn in the first half of 1991, also improved sharply, with pre-tax earnings rising to L19bn in the first six months of this year.

Consolidated sales for the group, which was subject to a battle for control between Mr Berlusconi and Mr Carlo De Benedetti, rose by 16.9 per cent to L837bn.

Net debt at Mondadori fell to L59.8bn from L96.6bn. Fininvest controls almost 90 per cent of the group.

Deutsche Bank purchase

DEUTSCHE Bank is extending its reach into the insurance sector with the purchase of a majority stake in the family-owned Deutscher Herold Versicherungs company, writes Andrew Fisher.

INTERNATIONAL COMPANIES AND FINANCE

Total disappoints with 47% decline in first half

By Alice Rawsthorn in Paris

TOTAL, one of France's largest oil groups, saw its net profits fall by 47 per cent to FFr1.91bn ($406.3m) from FFr3.61bn in the first half of the year. This was mainly due to depressed refinery prices, squeezed margins and the impact of the dollar's decline against the European currencies.

The interim results were well below the expectations of the Paris oil analysts, who had been forecasting first-half profits of between FFr2.2bn and FFr2.4bn.

The disappointing figures from Total reflect the general trend among large French companies, which have recently released a series of lacklustre sales and profit figures for the first half.

Total's shares have fallen sharply on the Paris stock market in recent weeks on concern about the implications of the continuing decline of the dollar.

They slipped again yesterday, falling FFr1.5 to FFr207.3, compared with FFr230, the price at which the French government sold a FFr9.5bn stake in the group in June. The shares were unaffected by the first-half figures which were published after the stock market closed.

Group sales fell to FFr68.76bn from FFr69.58bn during the first six months of the year.

Operating income slipped to FFr3.4bn from FFr5.77bn and cashflow to FFr5.29bn from FFr7.61bn. Earnings per share were reduced by more than half to FFr9.0 from FFr18.8.

The worst affected area of Total's activities was refining where operating income declined dramatically to FFr932m from FFr3.08bn. This was partly due to a "significant decrease" in European refining margins, which more than halved from an average of $5.2 a barrel in the first half of 1991, to an average of $2.1 in the corresponding period this year because of weak demand and high stocks.

Exploration and production sustained a slight decline in operating income to FFr1.31bn from FFr1.42bn.

Substantial turnround at Litton

By Alan Friedman in New York

LITTON INDUSTRIES, the diversified electronics, defence, marine engineering and resource exploration services group, achieved a substantial turnround in the fourth quarter of its 1991-92 fiscal year.

The California-based company recorded net income of $44.95m in the three months to end-July, compared with a loss of $58.4m in the same period of 1991.

The loss last year did, however, include $100.1m of charges taken because of the phasing out of a part of the group's integrated automation division.

Sales in the fourth quarter were $1.44bn, up from $1.37bn. Earnings per share in the quarter were $1.08, against a loss of $1.43 per share a year ago.

For the whole of the 1991-92 fiscal year Litton made $174.4m of net profit, compared with $63.5m in the 1990-91 year. Sales for the year ended July 31 1992 were $5.69bn, against $5.22bn.

Mr Orion Hoch, chairman, said fiscal 1992 operating profits from Litton's on-going businesses were 11 per cent higher.

Operating profit in the resource exploration services division improved by 29 per cent to $133.6m, thanks to a shift from North American to more international areas of energy exploration.

Defence budget cuts continued to reduce sales and operating profits from the group's advanced electronics division, Mr Hoch said.

This division suffered a $10m drop in operating profits for the year to $138.1m. He added, however, that internal consolidation efforts should lead to firmer profit margins.

On Wall Street, Litton's share price was marked $¾ higher to $46¼.

Ascii to receive Y16bn in fresh loans

By Steven Butler in Tokyo

ASCII, the Japanese software and publishing company, has reached final agreement with its banks that will lead to Y16.4bn ($133m) in fresh loans to the company.

Yesterday's announcement removes a cloud from the company's future. Ascii has been negotiating with its banks since late last year to raise funds to repay Y12bn in convertible bonds due at the end of the financial year.

In addition to funds to repay the bonds, Ascii has raised Y4.4bn in working and investment capital, of which Y3.5bn has been paid to the company.

Its bankers, which include the Industrial Bank of Japan, Fuji Bank, Sakura Bank, Yasuda Trust Bank, Kyowa Saitama Bank and Mitsubishi Bank, have, however, evidently extracted promises from the company to cut costs and trim loss-making operations. The company said yesterday this would not affect its film-making subsidiary.

Ascii was founded by three university students in 1978 and has grown quickly into Japan's largest independent software house, but its financial troubles appear to have stemmed diversification out of its core businesses.

● The downward revision in earnings estimates for Matsushita Electric Industrial reported in last Wednesday's paper covered the half year ending next month, not the full fiscal year as reported.

Westar Mining goes into bankruptcy

By Bernard Simon in Toronto

WESTAR Mining, Canada's biggest coal exporter, has slid into bankruptcy after failing to overcome a range of financial and labour problems.

A Vancouver judge has named a partner at auditors Arthur Andersen as bankruptcy trustee. Westar has total debts of about C$400m (US$334.3m). Its biggest creditor is Bank of Montreal.

But Mr Justice Bruce Macdonald has allowed Westar's two mines in south-east British Columbia to remain temporarily under court protection while efforts continue to secure their future.

Workers at the Greenhills mine, which produced 2.4m tonnes of coal last year, are negotiating with a prospective buyer of Westar's 80 per cent stake. The remaining 20 per cent is owned by Pohang Iron and Steel of South Korea.

Judge Macdonald has extended Greenhills' protection from creditors for at least another 60 days and has authorised the trustee to borrow whatever funds are needed to keep Greenhills in operation. The outlook is gloomier for the larger Balmer mine, which has been closed since early May by a labour dispute. Court protection for Balmer has been extended only to September 24.

Balmer, which shipped 5.3m tonnes of coal last year, requires substantial new investment to extend its life. However, Westar has failed to finalise a financial restructuring.

In addition, the union at Balmer, whose leadership has a reputation for being among the most intransigent in the North American mining industry, has rejected all efforts by management to introduce more flexible work practices.

Westar's problems are part of a much wider restructuring forced on the high-cost Canadian coal mining industry by sagging Japanese demand for coking coal and sliding prices. Another large British Columbia mine, Quintette, emerged from court protection earlier this year after a financial restructuring which left its creditors as substantial minority shareholders.

Tomson Pacific under investigation

By Simon Davies in Hong Kong

AN OFFICIAL investigation has been launched into the activities of Hong Kong's Tomson Pacific Group, which is headed by Macao casino entrepreneur Mr Stanley Ho.

The financial secretary appointed an inspector yesterday and trading in the three group listings was suspended. The announcement comes three weeks after the Securities and Futures Commission instigated an investigation into share dealings in Mr Lee Ming Tee's Allied group.

The SFC recommended the latest investigation into "a number of specific transactions" carried out by Tomson Pacific and its 33.4 per cent owned associate World Trade Centre (WTC), since 1990.

WTC was formerly Mr Alan Bond's Hong Kong investment company Bond Corporation International (BCIL), which was sold in June 1990. His 66 per cent stake was split between Tomson and independent parties.

The regulators required proof of the identity of the independent buyers, due to concerns that some might be acting in concert with Tomson, thereby breaching the 35 per cent trigger under the takeover code.

Tomson Pacific is 26 per cent owned by Rivera Holdings, whose shares were also suspended, but which is not caught up in the investigation.

Net profit improves 77% at HK group

FIRST Pacific Company, the Hong Kong-based marketing to telecommunications conglomerate, lifted net profit before extraordinary items by 77 per cent to HK$158m (US$20.5m) for the six months to June, writes Simon Davies.

The company benefited from a turnround in its loss-making Australian computer software company Tech Pacific and its Philippines unit Metro Drug.

First Pacific owns 62 per cent of Amsterdam-listed trading company Hagermeyer, which posted a 25 per cent rise in first-half earnings.

Playmates in Chinese venture

PLAYMATES Holdings, the Hong Kong toy company which markets and distributes the Teenage Mutant Ninja Turtle, plans to produce and sell the toys in China, writes Simon Davies.

Playmates has taken a 42 per cent stake in a joint venture with Pacific Concord, which will manufacture, distribute and retail Playmates toys over the border. The new company will be called Concord Playmates Holdings.

Profits rise 75% at MIM Holdings on revenue down 11%

By Kevin Brown in Sydney

MIM Holdings, the Australian mining group, yesterday announced a 75 per cent increase in net profit to A$132.8m (US$95.4m) for the year to the end of June, on revenue down 11 per cent to A$1.8bn. However, net profit was unchanged at A$87m after excluding an abnormal profit of A$45.8m on the sale of the group's interest in Teck Corporation of Canada.

At the bottom line, profit was A$106.3m after exchange differences and minority interests, compared with A$6.9m the previous year, when MIM wrote off its investment in the troubled Newlands, Collinsville and Abbott Point (NCA) coal project.

MIM said the revenue fall was partly caused by the exclusion from the results of the NCA operations, which are operating at capacity but generating insufficient cash to meet interest payments. The group is discussing refinancing proposals with the banks.

Revenue was also reduced by lower prices for copper, lead and gold, and copper production difficulties caused by adverse weather conditions.

However, MIM said reduced revenue from lower sales and prices was more than offset by a strong performance from the Porgera gold mine in Papua New Guinea, which is 30 per cent owned by Highlands Gold, an MIM subsidiary.

The group cut costs by nearly 12 per cent to A$1.7bn.

At the operating level, profits fell to A$145m from A$155m the previous year, but increased to A$62m in the fourth quarter from A$47m, reflecting cost savings.

The total dividend was unchanged at five cents.

Bond reconstruction on course as dispute settled

By Kevin Brown

THE COMPLEX reconstruction of Bond Corporation Holdings, once the quoted flagship of Mr Alan Bond, appears to be back on course after the group settled a dispute with Australian Consolidated Investments (Acil).

Acil, formerly Mr Robert Holmes à Court's Bell Resources, also announced a net loss of A$46m (US$35.3m) after abnormal items for the year to end-June, against a loss of A$108.2m the previous year.

Bond Corp's reconstruction was endangered in June when Acil withdrew from a management committee overseeing implementation of a debt-for-equity swap which would give Acil 25 per cent of Bond shares.

Acil had earlier stopped making working capital payments of up to A$1m a month to Bond Corp, which were provided for under an agreement reached last year between Bond and its creditors.

The dispute was complicated by the acquisition of Acil earlier this year by Rossington Holdings, a bidding vehicle jointly owned by Brierley Investments of New Zealand and GPG, Sir Ron Brierley's UK investment company.

However, Mr Colin Henson, Acil's executive director, said the group had suspended a claim over several of Bond Corp's remaining assets in return for A$16.75m in cash and assets.

Mr Henson said Acil would resume working capital payments and help finance the cost of a legal action brought by Bond against the Western Australian state government over the failed Kwinana petrochemicals project.

Bond is claiming damages of A$500m from the government, which pulled out of the project in the face of local opposition. Acil said its working capital payments would be repaid from the proceeds of the legal action.

The deal also provides for a withdrawal of a legal action brought by Bond against Acil over the distribution of profits from the sale of shares in Bond Media, a former associate of both companies, now controlled by Mr Kerry Packer.

SA Brewing earnings rise

By Kevin Brown

SA BREWING, the Australian drinks, food and manufacturing group, unveiled an increase of 11 per cent in net profits to A$113m (US$86.9m) for the year to end-June, on sales up 4.6 per cent to A$2bn.

The result marks the third consecutive year of earnings growth for SA Brewing, which has defied Australia's recession and slow recovery with improvements of 21 per cent in 1990 and 15 per cent last year.

The group raised the final dividend to 7.75 cents from 7.5 cents, making a total of 15.5 cents, fully franked, against 15.25 the previous year.

SA Brewing said the improvement in sales revenue was largely due to a 22 per cent improvement in the beverage and food division.

Mr Ross Wilson, managing director, said the result was "excellent" given difficult trading conditions. But he warned the current year would be difficult because there were no signs of recovery in the domestic economy. He said SA Brewing's wine and water heater businesses, both of which have international markets, would provide the group's "primary growth" over the next 12 to 18 months.

GM plans to invest $20m in return to Argentina

By John Barham in Buenos Aires

GENERAL MOTORS is to invest more than $20m in a new plant in Argentina, 13 years after it withdrew from the country.

It will invest about $20m in cash and an unspecified amount in industrial equipment for the new facility which is to be set up with an Argentine group. The factory will build commercial vehicles for the local market and for export to Brazil to compensate for rising imports from Brazil where GM has a major presence.

GM is joining forces with the local owners of Iveco, the Italian truck company. In Argentina, Fiat holds only 30 per cent of Iveco. GM will set up a joint venture with the wealthy Garfunkel family, which holds the other 70 per cent. Fiat is not expected to put more money into the venture, thus reducing its holding in Iveco.

GM's decision follows the announcement last month by Renault, the French state-owned car maker, to withdraw from Argentina by selling a majority stake in its local subsidiary to a group of Argentine and Brazilian investors.

Israeli banks post advance at interim stage

By Hugh Carnegy in Jerusalem

ALL BUT one of Israel's four main banks have reported sharply improved net profits in the first half of 1992.

The exception was Bank Mizrahi which the government earlier this month agreed to sell to an Israeli businessman in a deal intended to begin the long-delayed process of divesting the state's majority states in all four big banks.

The agreement to sell Bank Mizrahi to Mr Gad Ze'evi, who owns the small Maritime Bank and other private businesses, requires the approval of the Knesset finance committee which this week delayed a decision while it reviewed the price of the deal.

Mr Ze'evi agreed to pay $100m for a 26 per cent stake in Bank Mizrahi, the smallest of the four leading banks. He has an option to purchase another 25 per cent for a further $85m and, meanwhile, will be able to exercise the votes of government shares sufficient to give him majority control.

If the deal goes through, it will mark a breakthrough in the government's efforts to sell off the bank holdings it acquired for $7bn to rescue the banks from a share price collapse in 1983. Under a share preference arrangement, control of the banks was left in the hands of the original owners. But government shares will have full voting rights as soon as they are sold back to the private sector.

The bank sale process is seen as a test of the government's commitment to reducing the state's role in the economy and as an important fund-raising project, but it has been dogged by delays and setbacks for the past three years.

Bank Mizrahi, to date controlled by the Mizrahi world religious Jewish organisation, lagged behind its larger competitors in performance over the first half.

Net profits were Shk26.6m ($11m) compared with Shk24.9m last year. Israel Discount Bank, previously owned by the Recanati family of Tel Aviv, did best, posting a 57.6 per cent rise in net profits to Shk49.7m, thanks to improved revenue from financing activity at home and profits of $8.5m from Israel Discount Bank of New York.

Continued losses in its New York subsidiary dragged down profits at Bank Leumi, controlled by the Jewish Colonial Trust, but it still posted a 35 per cent increase to Shk81.7m. The biggest of the four, trade union-controlled Bank Hapoalim, reported a 29 per cent rise in net profits to Shk111m.

Prices for electricity determined for the purposes of the electricity pooling and settlement arrangements in England and Wales.

1/2 hour period ending	Provisional Price for Trading on 02.09.92 Pool purchase price £/MWh	Final Prices for Trading on 05.08.92 Pool purchase price £/MWh	Pool selling price £/MWh
0030	17 76	17 71	17 71
0100	17 76	17 71	17 71
0130	17 76	17 70	17 70
0200	17 76	17 70	17 70
0230	17 76	17.70	17 70
0300	17 76	17 70	17 70
0330	17 76	17 70	17 70
0400	17 76	17 70	17 70
0430	17 76	17 70	17 70
0500	17 76	17 70	17.70
0530	17 69	17 80	17 80
0600	17 58	17 71	17 71
0630	20 46	20 17	22.51
0700	22 30	20 87	23.27
0730	22 60	22 72	25 15
0800	23 27	23 99	26 42
0830	25 77	25 13	27 55
0900	26 21	26 44	28 87
0930	33 75	26 44	28.84
1000	33 78	27 99	30 41
1030	33.74	27 99	30.39
1100	26.26	26 44	28 79
1130	26.25	26 44	28 78
1200	26 31	26 44	28 77
1230	26 28	26.44	28 75
1300	26 16	26 44	28.76
1330	26.04	26 27	28 59
1400	25 35	25 62	27 93
1430	23.76	25 62	27 93
1500	23 75	25 62	27 94
1530	24 41	25 62	27.94
1600	24 42	25.62	27 93
1630	24 43	25.62	27.92
1700	25.48	27.99	30 38
1730	25.46	27.99	30 35
1800	24 41	27 99	30 37
1830	23 65	24 81	27 12
1900	23 25	24 46	26 76
1930	23.06	23 91	26.23
2000	23 06	23 91	26.24
2030	23.25	19 02	19.02
2100	23.25	22.72	25.03
2130	23.25	30 73	33.26
2200	22 90	30 73	33 26
2230	22 60	30 73	33 30
2300	22 52	22.72	25.06
2330	17 79	21.52	23 83
2400	17 85	20.87	23 16

Prices are determined for every half-hour in each twenty-four hour period. Prices are in pounds per megawatt-hour, rounded to two decimal places. To convert prices to pence per kilowatt-hour the decimal point should be moved one place to the left eg £18.86/MWh becomes 1.886p/kWh. Provision for the determination of pool prices is made in the Pooling and Settlement Agreements which govern the operation of the electricity pool in England and Wales. The Pool Purchase Price is the basis of the majority of payments made to generators in respect of electricity traded through the pool. The calculation of pool prices is a highly complex process the product of which is subject to revision or correction until final pool prices are determined approximately twenty-four days after the day of trading. Accordingly due to the possibility of their revision and/or correction no reliance should be placed upon provisional pool prices for any day being the same as final pool prices for that day. Final pool prices are also capable of revision. Pool Selling Price is the price paid by purchasers of electricity under the pool trading arrangements. It is dependent upon the determination of Pool Purchase Price. Further information on pool prices is provided on behalf of the Pool by NGC Settlements Limited. Anyone wishing to receive such information should telephone 0602-456789 between 8.30am and 5.15pm Monday to Friday.

NGC Settlements Limited 1992

INTERNATIONAL CAPITAL MARKETS

Europe focuses on currency tension

By Sara Webb in London and Patrick Harverson in New York

TENSIONS in the exchange rate mechanism of the European Monetary System provided the main focus of attention for Europe's government bond markets yesterday with the weakness of the lira, sterling and French franc depressing sentiment in the respective bond markets.

GOVERNMENT BONDS

The Italian government bond market fell back sharply due to the combination of a poor bond auction and the weak currency.

The treasury's L1,500bn issue of 10-year, 12 per cent fixed-rate notes was fully subscribed, but dealers said the price at which the stock was allocated was well below previous auction levels.

The bonds were sold at 92.10, resulting in a gross yield of 13.91 per cent, compared with 13.22 per cent at the previous auction of 10-year notes. The futures contract, which opened at 92.40, fell to a low of 91.48 before ending the day at around 91.52.

French government bonds drifted lower on currency and opinion poll worries ahead of the French referendum on the Maastricht treaty. The yield on the 8½ per cent bond due 2002 opened at 9.17 per cent and ended at 9.18 per cent. The latest opinion poll from France forecast an equal split between yes and no votes in the referendum.

The French treasury announced that it will offer FFr10bn-Fr12bn of OAT tap stocks at Thursday's auction.

■ US TREASURY prices firmed across the board after the Federal Reserve injected reserves into the banking system by purchasing coupon-bearing securities from dealers.

At the close the benchmark 30-year government issue was up 11/32 at 98 23/32, yielding 7.377 per cent. There was less movement at the short end of the market, where the two-year note was up 1/16 at 100¼, yielding 4.102 per cent.

Although the dollar weakened yesterday, its first serious decline in three trading days, it had little impact on bond market sentiment. Investors paid more attention to the day's main economic news, which was a drop in the National Association of Purchasing Management's index from 54.2 in July to 53.7 in August. The figures suggested that the pace of activity in the manufacturing sector remains extremely sluggish for the current stage in the economic cycle.

Prices did not take off, however, until the afternoon when the Fed made its "coupon pass" by buying coupons maturing in April 1993 or later for delivery tomorrow. The pass had been expected but not until later in the week, and had the greatest effect on intermediate prices.

■ IN THE UK government bond market, gilts drifted lower with the Liffe gilt futures contract falling from 94.29 to 94.25 by late afternoon. In the cash market, the 9¾ per cent gilt due 2002 slipped 1/8 to 100 21/32.

■ JAPANESE government bonds continued to fall back yesterday as hopes of an imminent cut in interest rates faded in the wake the government's emergency spending package.

The markets had hoped that the Y10,700bn fiscal package, which was announced last Friday and which is aimed at boosting economic growth, would be accompanied by a cut in the official discount rate.

However, in the absence of such a cut, the bond cash and futures markets have fallen back from last week's high levels. The key December futures contract ended at 104.69 against 104.78 at Monday's close, and compared with last week's high of 106.65.

In the cash market, the yield on the new 10-year benchmark – the No 145 JGB – opened at 4.99 per cent and traded in a range of 4.955 per cent to 5.055 per cent, before moving to 5.06 per cent in London trading.

Short-term interest rates rose with the rate on three-month certificates of deposit climbing to 3.82 per cent from 3.76 per cent on Monday.

Dealers said that the bond market remains "slightly concerned" about the possibility of new bond issuance even though the government said it would not issue additional bonds in order to pay for its spending package.

BENCHMARK GOVERNMENT BONDS

		Coupon	Red Date	Price	Change	Yield	Week ago	Month ago
AUSTRALIA		10.000	10/02	107.3593	-0.904	8.68	8.39	8.33
BELGIUM		8.750	06/02	97.5500	-0.350	9.13	8.97	9.01
CANADA *		8.500	04/02	108.4800	+0.230	7.26	7.13	7.46
DENMARK		9.000	11/00	95.3500	-0.470	9.84	9.68	9.46
FRANCE	BTAN	8.500	03/97	95.7453	-0.207	9.67	9.48	9.53
	OAT	8.500	11/02	95.6200	-0.320	9.16	8.98	9.18
GERMANY		8.000	07/02	100.6950	-0.025	7.90	7.91	8.09
ITALY		12.000	05/02	91.7000	-0.600	14.02†	13.61	14.14
JAPAN	No 119	4.800	06/99	93.5657	-0.743	4.89	4.79	4.96
	No 129	6.400	03/00	108.2120	-0.841	4.91	4.77	4.94
NETHERLANDS		8.250	08/02	99.3750	-0.050	8.34	8.31	8.39
SPAIN		10.300	06/02	85.8000	-0.800	12.91	12.18	12.20
UK GILTS		10.000	11/96	100-03	+0/32	9.98	9.56	9.46
		9.750	08/02	100-18	-2/32	9.65	9.27	9.21
		9.000	10/08	97-04	-2/32	9.35	9.02	9.00
US TREASURY *		6.375	08/02	98-23	+13/32	6.55	6.41	6.62
		7.250	08/22	98-15	+12/32	7.37	7.28	7.42
ECU (French Govt)		8.500	03/02	92.0700	+0.120	9.81	9.35	9.59

London closing *New York closing. Yields: Local market standard
† Gross annual yield (including withholding tax at 12.5 per cent payable by non-residents.)
Prices: US, UK in 32nds, others in decimal. Technical Data/ATLAS Price Sources

Members of NYSE turn in strong quarter

By Patrick Harverson in New York

THE New York Stock Exchange reported that its member firms made an after-tax profit of $1.14bn in the second quarter. This is the second-best performance and further proof that the US securities industry is enjoying unprecedented prosperity.

The second-quarter earnings comfortably beat the $859m earned at the same stage a year ago, but did not quite match the $1.36bn made in the first three months of this year.

The combined profits of the first two quarters was $2.51bn, smashing the previous best first-half performance, which was the $1.82bn achieved in 1991 and 1983.

The NYSE's 315 member firms have enjoyed record profits this year because of low US interest rates which have stimulated record issues of underwritten securities by US corporations, and attracted a flood of investors into the equities and bond markets.

Low interest rates have also sharply reduced the cost of securities firms' capital. This has been put to profitable use in domestic and international securities markets, and provided many broking houses with the opportunity to earn big profits from their proprietary trading businesses.

The NYSE said its members' strong profits in the April to June period represented an 11.3 per cent annual return on their average net worth of $40.4bn.

Export-Import Bank of Japan in C$350m offering

By Tracy Corrigan

THE Export-Import Bank of Japan yesterday launched a C$350m 10-year offering, leading an expected surge of new issues, as the Eurobond market revives after its traditional summer break.

Although many borrowers are well advanced in their 1992 funding programmes, they are likely to press ahead with further financings planned for this year sooner, rather than later.

"A lot of borrowers are well ahead of schedule, but there is the French referendum later this month and the US election in November," said one trader. Borrowers are unlikely to wait until December to complete this year's financings, in case markets prove unfavourable.

The malaise of the European bond markets ahead of the French referendum is likely to channel funding to the dollar and Canadian dollar sector. Heavy redemption flows in these markets are helping to sustain investor appetite.

INTERNATIONAL BONDS

A handful of Euroyen offerings yesterday for Sapporo Breweries, Japan Airlines, Sumitomo Chemical and Hankyu Corporation were targeted at Japanese investors.

However, a number of other borrowers are eyeing the Euroyen market, including the Japan Development Bank, which is said to be preparing a Y100bn seven-year deal.

Other borrowers considering the Euroyen sector include the European Investment Bank, the World Bank and the African Development Bank, according to dealers. However, they added that the market could easily become overloaded.

"The Euroyen market is quite thin," said one trader. "Some borrowers may decide to switch to the dollar sector, where they can lock in historically low rates."

Among yesterday's new issues, the Export-Import Bank of Japan's C$350m deal via Swiss Bank Corporation, priced to yield 37 basis points over the 10-year Canadian government bond yield, met firm demand from Japanese investors. The deal was bid at 99.55 at the end of trading, unchanged from the fixed reoffer price.

In the sterling sector, National Provincial Building issued £150m of floating rate notes, due 1997, via UBS Phillips & Drew, which was targeted at UK-based investors.

NEW INTERNATIONAL BOND ISSUES

Borrower	Amount m.	Coupon %	Price	Maturity	Fees	Book runner
STERLING						
National Provincial(b)‡†	150	(b)	100	1997	45/25bp	UBS Phillips & Drew
CANADIAN DOLLARS						
Export Import Bank Japan(a)†	350	7.75	101.225	2002	2/1.775	SBC
YEN						
Sapporo Breweries(c)‡†	10bn	(c)	100	1999	25/5bp	Yamaichi Intl. Europe
Sapporo Breweries(d)‡†	10bn	(d)	100.10	1997	30/10bp	Nikko Europe
Japan Airlines(a)†	20bn	5.5	101.75	1999	1⅞/1½	Nikko Europe
Japan Airlines(a)†	10bn	5.7	101.75	2002	2/1¾	Yamaichi Intl. Europe
Sumitomo Chemical(e)‡†	15bn	(e)	100.25	1997	25/5bp	Nomura Intl.
Sumitomo Chemical†	10bn	5.6	101.75	1999	1⅞/0.2	Daiwa Europe
Hankyu Corp.(a)†	20bn	5.85	101.80	2002	2/1¾	Daiwa Europe
Hankyu Corp(f)‡†	10bn	(f)	100.15	1995	30/20bp	Daiwa Europe
SWISS FRANCS						
Toyo Shutter★★♦	100	-	100	1996	-	Credit Suisse
GUILDERS						
Rabobank Nederland(a)†	400	8.5	100.55	1997	1/⅝	Rabobank Nederland

★★Private placement. ♦With equity warrants. ‡Floating rate note. †Final terms. a) Non-callable. b) Coupon pays 1/16 above 3-month Libor and is payable quarterly. Non-callable. c) Coupon pays 30bp above 6-month Libor and is payable semi-annually. Non-callable. d) Coupon pays 25bp above 3-month Libor and is payable quarterly. Non-callable. e) Coupon pays 20bp above 3-month Libor and is payable quarterly. Non-callable. f) Coupon pays 30bp above 3-month Libor and is payable quarterly. Non-callable.

Italy turns in top performance for August

By Sara Webb

ITALY was the top-performing government bond market last month with a 1.67 per cent return in local currency terms, according to JP Morgan's bond index.

The Italian bond market has been one of the more volatile government markets since June 2, when Denmark rejected the Maastricht treaty and threw the future of European economic and monetary union into a state of confusion.

The Bank of Italy's decision to cut its official discount rate by half a percentage point to 13.25 per cent on August 4 provided a boost for the bond market.

However, the return on the Italian government bond market so far this year is only 2.8 per cent, placing Italy well behind most of the other European and the dollar bloc bond markets in local currency terms.

Germany and the Netherlands were the next best-performingmarkets after Italy, with returns of 1.21 per cent and 1.03 per cent respectively in August: the gains reflect the decision by investors to shift assets into the D-Mark bloc due to concern over the future of European economic and monetary union, and fears that there might be a realignment of the exchange rate mechanism of the European Monetary System.

Last month's worst-performing markets were Australia (-3.59 per cent), Sweden (-2.67 per cent), Spain (-1.09 per cent) and the UK (-1.01 per cent). Australian government bond prices suffered losses of nearly 4.5 per cent in August, mainly due to foreigners' lack of confidence in the Australian dollar and uncertainty over the timing of the next cut in interest rates.

Sweden's government bond market tumbled after the central bank jacked up interest rates to stem heavy outflows of currency.

US dollar-based investors enjoyed "outstanding returns . . . in foreign bonds" according to JP Morgan, due to the US currency's recent decline against the ERM currencies. The German bond market showed a gain of 6.84 per cent in dollar terms over the month and of 14.31 per cent since the start of the year.

Laurentian Bank advances 10%

LAURENTIAN BANK, the banking arm of the Laurentian financial services group, posted a 10 per cent gain in third-quarter profit to C$10.1m (US$8.4m), or 53 cents a share, writes Robert Gibbens in Montreal. Nine months' profit was C$28.9m, or C$1.53, against C$25.4m, or C$1.52, on fewer shares outstanding.

Salomon names general counsel

By Patrick Harverson

SALOMON, the parent group of Wall Street securities house Salomon Brothers and oil trading and refining firm Phibro Energy, yesterday appointed Mr Robert Mundheim as its new general counsel. He succeeds Mr Robert Denham, who became chairman of Salomon in June.

Mr Mundheim, 59, is co-chairman of the New York law firm Fried, Frank, Harris, Shriver & Jacobson, and has extensive legal experience in the world of finance and securities markets.

During the 1960s he was special counsel to the Securities and Exchange Commission, between 1977 and 1980 he was general counsel to the US Treasury department, and he is currently chairman of the international committee of the National Association of Securities Dealers.

The appointment of Mr Mundheim marks the end of a turbulent period for Salomon's legal and compliance department. Last year government regulators discovered that Salomon Brothers' bond trading desk had submitted false bids in US Treasury auctions. The scandal led to the resignation of the then chief counsel, Mr Donald Feuerstein, along with three senior executives.

MARKET STATISTICS

FT/ISMA INTERNATIONAL BOND SERVICE

Listed are the latest international bonds for which there is an adequate secondary market. Closing prices on September 1

RISES AND FALLS YESTERDAY

	Rises	Falls	Same
British Funds	16	39	21
Other Fixed Interest	0	14	1
Commercial, Industrial	113	390	930
Financial & Property	92	125	582
Oil & Gas	14	17	55
Plantations	1	0	8
Mines	16	46	88
Others	21	61	34
Totals	273	692	1,719

LONDON RECENT ISSUES

EQUITIES

FIXED INTEREST STOCKS

RIGHTS OFFERS

... and yield based on prospectus or other official estimates for 1992-93. H Dividend and yield based on prospectus or other official estimates for 1991. L Estimated annualised dividend, cover and p/e based on latest annual earnings. M Dividend and yield based on prospectus or other official estimates for 1991-92. N Dividend and yield based on prospectus or other official estimates for 1992. O Gross. R Forecast annualised dividend, cover and p/e ratio based on prospectus or other official estimates. W Pro Forma figures. ‡ Offered to holders of ordinary shares as a "rights". ‡ Introduction. § Placing price. †† Reintroduction. ¶ Unlisted securities market. ♦ Issued in connection with reorganisation, merger or takeover. pm Price at a premium. ■ Units comprising 4 Ords. and 7 Zero Div. Prefs. and 4 Stepped Pref. shares. ♦ Units comprising 5 Ords. and 1 Warrant.

TRADITIONAL OPTIONS

- First Dealings Sept. 1
- Last Dealings Sept. 11
- Last Declarations Nov. 26
- For settlement Dec. 7

3-month call rate indications are also shown on this page.

Calls in ASDA, Aviva Petrlm., Gestetner, Goal Petrlm., Harland & Simon, Mining & Allied Supplies, MTM, Tarmac and Trafalgar House.

LIFFE EQUITY OPTIONS

Option		Nov	Feb	May	Nov	Feb	May
Brit Aero (*205)	180	39	44	46	17	22	28
	200	28	35	39	29	35	36
	220	20	27	28	44	46	47
Dixons (*187)	180	12	22	28	4½	11	14
	200	3	13	18	17	20	25

Calls 8,068 Puts 6,599
FT-SE Index Calls 3,362 Puts 3,059
Euro FT-SE Calls 39 Puts 122
*Underlying security price. † Long dated expiry mths. Premiums shown are based on closing offer prices.

TRADITIONAL OPTION 3-month call rates

■ INDUSTRIALS	p	Charter Cons.	37	Ladbroke	18	Sears	8½	■ OILS	
Allied-Lyons	49	Comm Union	34	Legal & Gen	29	SmKl Bchm A	50	Aviva Pet	25
Amstrad	6	Courtaulds	43	Lex Service	22	TI	65	BP	18
Astec (BSR)	3	Eurotunnel	32	Lloyds Bank	32	TSB	11½	Burmah Castrol	48
BAT Inds	58	FKI	6	Lonhro	12	Tesco	22	Conroy Pet	6½
BOC	53	FNFC	7	Lucas Inds	12½	Thorn EMI	63	Gaelic Res	½
BTR	35	Forte	19	Marks Spencer	27	T & N	11½	Premier Cons	2¾
Barclays	29	GKN	33	Midland Bank	30	Unilever	70	Shell	35
Blue Circle	24	Gen Accident	38	NatWest Bank	25	Vickers	15	Tuskar Res	½
Boots	34	GEC	17	P & O Dfd	37	Wellcome	75	■ MINES	
Bowater	60	Glaxo	52	Racal Elect	5½	■ PROPERTY		RTZ	47
Brit Aerospace	26	Grand Met	38	RHM	18	Brit Land	16		
British Steel	7	GRE	13	Rank Org	56	Land Sec.	30		
BT	25	Hanson	18	Ratners	3	MEPC	26		
Cadburys	38	ICI	95	Reed Intl	44				

Acquisition helps Dewhirst rise to £2.4m

By Roland Rudd

DEWHIRST, the clothing group, reported pre-tax profits near-trebled for the half year to July 17 on the back of its acquisition of Slimma, which supplies women's wear to Marks and Spencer.

Pre-tax profits rose from £851,000 to £2.4m on increased sales of £81.3m (£54.8m).

Mr Tim Dewhirst, chief executive, said: "The six months' contribution from Slimma was a substantial part of the improvement in sales and profits. Marks and Spencer now accounts for more than 80 per cent of our sales."

The company has terminated its contract with a Serbian company to make clothes for Marks and Spencer from raw materials supplied by Dewhirst.

When imports from Serbia were prohibited under UN Resolution 757, the Department of Trade and Industry granted Dewhirst an import licence to get its materials back from Serbia.

Dewhirst had paid more than £750,000 to Genex, the Serbia-controlled trade company, to set up the deal with the Serbian manufacturer.

However, Mr Dewhirst said the sum had been paid into a London account, which was now frozen. "As far as I am concerned the case is closed," he said.

Since acquiring Slimma for £14.1m last year borrowings rose to about £6m. That is expected to be wiped out by cash generation by the end of the year. Interest payable rose to £365,000 (£306,000).

Earnings per share increased to 1.25p (0.59p) while the interim dividend is raised to 0.32p (0.29p).

Astec (BSR) returns to the black with £2.2m

By Paul Taylor

ASTEC (BSR), the Hong Kong-based and London-listed electronics company which is 48.9 per cent owned by Emerson of the US, moved back into profit in the first half of 1992 after cutting costs and trimming losses in its electronic components division.

However, Mr George Tamke, chief executive, said yesterday that the company plans to close its cellular telephone and telecommunications components manufacturing business following a sharp decline in sales.

Pre-tax profits in the six months to June 28 totalled £2.2m or 0.6p per share compared with losses of £2.7m or 0.93p per share.

Turnover declined just over 7 per cent, from £134.2m to £124.4m.

Despite the improvement, the interim dividend is again omitted.

The last pay-out was a 0.7p interim in 1990.

After excluding figures for a printed circuit board business and a small Hong Kong-based travel business which have been sold, first half turnover decreased by £9m to £117.1m.

Mr Tamke said the return to profitability reflected the company's strategy of focusing more closely on its core power conversion business.

The electronics components division sustained a reduced operating loss of £354,000 (£1.2m) on sales of £41.3m (£51.9m).

The company said the drop was almost entirely accounted for by a reduction in the sales of transportable telephones and telecommunications components.

After considering alternatives for the troubled mobile phone business Mr Tamke said that the company had recently decided to "shut it down."

Torday & Carlisle loses £0.35m and omits pay-out

By Peggy Hollinger

TORDAY & CARLISLE, the Newcastle-based engineer, yesterday passed its interim dividend for the first time in almost a decade as it announced a deficit of £353,000 pre-tax for the six months to June 30.

Turnover fell 10 per cent to £20.1m, and losses per share were reduced from 6.3p to 3.1p.

The outcome compared with last time's losses of £90,000 before exceptional restructuring charges of £544,000. Then, an interim dividend of 1.5p was paid.

Mr Paul Torday, chief executive, hinted that payment of the full-year dividend could depend on the sale of Oldham, the loss-making sign subsidiary. "If Oldham is not there, the remaining two businesses are ... cash generative and gearing will have come down. That is a completely different scenario."

Oldham, which maintains the neon signs in London's Piccadilly Circus, was purchased just four years ago for £9m. In the period, the business incurred losses of £972,000 (£869,000).

A main plank of Torday's successful defence last year against the hostile £18.8m bid from rival engineer Dowding & Mills had been its defence of Oldham Signs.

However, the "gentle economic recovery" expected for 1992 had not materialised, Mr Torday said. Therefore the company, under the relatively new chairmanship of Mr Peter Ryan, former deputy chairman of Davies & Newman, had decided to sell Oldham.

Diesel Marine International, the engine repair business, suffered a 30 per cent drop in operating profits to £902,000. Mr Torday said the shipping industry had been severely depressed in the first half, with freight rates down by some 30 per cent in January.

However, the division has expanded into the automotive market. Mr Torday said he expected this to be an increasingly important business.

Elfab-Hughes – which makes pressure relief and safety equipment – improved operating profits by 24 per cent to £380,000 on steady sales.

Catching the bus to engineer a rare market event

Paul Cheeseright considers the sale of shares in Trinity Holdings where banks have a large equity stake

THE SINKING stock market evidently holds no terror for Trinity Holdings, the specialist vehicle manufacturer. After a week in which the FT-SE 100 Index declined more than 50 points, it announced its intention to apply for a listing later this month.

With the market casting a jaundiced eye over even traditionally defensive stocks, like breweries and food manufacturers, any listing would have looked a bold move. The fact that it is for an engineering company makes the timing look odder still.

The arrival on the market of engineering companies is in any case a rare event. The last was Prospect Industries in May 1991. The sector, highly exposed to the recession, has found little favour as investors have watched another bout of painful restructuring and shrinking profits.

Made confident by its own expansion, Trinity is hoping to place shares worth about £25m. The placing is arranged by Baring Brothers and brokered by Albert E Sharp. The management expects to retain majority control of a company with a likely capitalisation of about £80m.

Under the Dennis brand name, Trinity makes refuse collection vehicles and chassis for fire engines, buses and coaches. Its Duple Metsec subsidiary makes complete bus kits, sold in developing countries. Reliance Mercury specialises in dock-handling and airport towing vehicles, while Carmichael manufactures airport crash tenders.

For the Warwick-based group, with plants in Guildford, Halifax, Tipton and Worcester, the simple fact of placing the shares may be more important than immediate market performance.

The reason lies in its structure. The company was a subsidiary of Hestair until 1989 when Hestair decided to concentrate on management services and shed its engineering arm. That resulted in a £27.3m management buy-out led by Mr Geoff Hollyhead, chairman and chief executive.

The new company began with three levels of debt – senior, mezzanine and preference shares – totalling £28.8m. But what made the buy-out idiosyncratic was that the bank consortium involved, headed by Citicorp Investment and Bankers Trust, took 49 per cent of the equity, leaving the management and employees with 51 per cent.

There is no suggestion that relations between the Trinity management and the banks have ever been less than amiable and mutually supportive. And Trinity has repaid £12m of its £16m senior debt, so that its total debt burden, apart from overdrafts, stands now at £11.8m. This is made up of the balance of the senior debt, £4m of mezzanine finance and £3.8m of preference shares.

Mr Hollyhead said the bank consortium was prepared to extend its loans beyond the existing five year term, but the heavy equity holding of the consortium and its consequent involvement in management decisions has left Trinity slower on its feet than it might otherwise have been.

It is not yet clear exactly how much money Trinity will seek to raise, or on what terms, but, provided the placing is a success, the overall effect will be not only to widen its equity but also to wipe out its indebtedness.

The main elements of recent growth have been the acquisition of Reliance Mercury and Carmichael, the activities of which, combined with those of Duple Metsec, account for 27 per cent of Trinity's steadily increasing turnover. At the same time new products have been introduced, notably a new refuse collection vehicle and a new chassis for a medium-sized bus, the Dart, now the best selling bus on the UK market.

Unit production at Trinity has been rising steadily since 1989 along with turnover, which, in the year to January 1993, should top £100m, nearly doubling that of the year to January 1990.

Taking the market route: Geoff Hollyhead and Patrick Geary, a director

Profits before tax and interest payments to the bank consortium should this year reach about £8m, against £5.4m in the January 1992 year and £4m in the January 1990 year.

Since the buy-out, conditions in the refuse collection vehicle and bus and coach markets have been discouraging. This has had less to do with recession than the fall-out from government policies.

Abolition of grants to bus buyers, the privatisation of National Bus and the deregulation of the bus industry have all contributed to a 50 per cent cut in what Trinity estimates to be the normal level of bus and coach purchases.

The purchase of refuse collection vehicles has been 40 per cent down nationally on normal buying patterns, largely because of the turmoil created by pushing local authority services out to tender and the reluctance, under those circumstances, to invest in replacement vehicles.

Believing that these two sectors will settle down after the organisational changes, Trinity expects to increase production and, if it can hold its market share, increase profits.

Persimmon falls 42% to £7.25m

By Andrew Taylor, Construction Correspondent

SHARE PRICES of UK housebuilders were sent tumbling again yesterday after Persimmon, regarded as one of the best companies in the sector, announced a 42 per cent fall in pre-tax profits for the six months to June 30.

More than £23m was knocked off Persimmon's stock market value as the share price fell 25p to 148p.

Mr Duncan Davidson, chairman, described the UK housing market as the worst in his 30 years in the business. Interim profits fell from £12.5m to £7.25m despite increased sales of £71.5m (£68.5m).

Mr Davidson said that lower house prices, increased selling costs and the high price paid for land at the end of the 1980s had pushed net margins down from 18.2 per cent to 10.1 per cent.

Part-exchange deals and special offers, such as free carpets and white goods, cost the group £3,500 for each home sold. This was equivalent to a 5 per cent reduction in profit margins on an average priced home of £63,000. If discounts were included, the figure would have been even higher.

Duncan Davidson: housing market worst for 30 years

"In other words sales incentives could reduce pre-tax profits by about £8m this year on sales of about 2,400 homes, slightly more than the 2,300 sold last year," said Mr Davidson.

The group sold 1,128 homes in the first half compared with 1,100 last time. Average selling prices, after taking account of discounts, were 8 per cent lower.

The slight increase in sales meant that Persimmon was increasing its share of a reduced market for new house sales, making it the seventh largest housebuilder in the country. Last year it was the eighth largest.

Prices for housing land have fallen sharply and in some cases were between a quarter and third of their peak in the late 1980s, Mr Duncan Davidson, said yesterday. Prices in parts of the Midlands had fallen from between £600,000 and £700,000 an acre to just £200,000. Owners which had been holding land in the hope that house prices would rise were beginning to sell sites at more realistic values, he said. Persimmon had increased its land bank to 13,300 plots with planning permission, representing about 5 years' supply at current selling rates. The group said that bank was higher priced land bought in the late 1980s.

Earnings per share fell to 5.2p (10.1p). The interim dividend is maintained at 2.8p and a same-again final of 5.8p is forecast, "unless market conditions deteriorate further."

Mr Davidson warned that less resilient builders were expected to cut or omit dividends when they announce interim results during the next few weeks. "Our results, given the state of the market, were not too bad," he said.

The balance sheet remained strong with net debt of £32m, equivalent to 24 per cent of shareholders funds of £132m. This excluded £11m of off-balance sheet finance reflecting Persimmon's share of housing joint ventures.

See Lex

Persimmon

Source: Datastream

Unigate disposes of US cheese operations

By Maggie Urry

UNIGATE, the food and transport group, is continuing the restructuring of its portfolio of activities with the sale of its US cheese operations for *about $75m (£37m).*

The disposal will give Unigate a profit over the book value of $57m and represents an exit multiple of 16 times last year's profits.

Unigate's shares rose 4p to 231p.

The buyer is Stella, a larger US cheese business ultimately owned by Artal of Belgium. The consideration will be met in cash and could be adjusted to reflect working capital at the time. The sale is subject to approval by US competition authorities.

Unigate's US cheese operations consist of two businesses, Frigo and Gardenia, which make Italian-style cheeses. In the year to end-March the two made an operating profit of £4.5m, a recovery from £400,000 previously.

Mr Ross Buckland, chief executive of Unigate since October 1990, said the business had been subject to volatile milk prices and despite action taken to improve profitability Unigate was still not satisfied with the return it was making. Profits were expected to fall again in the current year.

In February this year Unigate sold JP Wood, its loss-making chicken operation, and last month sold part of its Giltspur International exhibition business. Its Wincanton car contract hire operation is being run down, and Unigate is discussing the sale of its vehicle rental activities. Last year Unigate set up a £76m provision to cover losses on businesses sold or closed.

The cash from the sale of the US cheese business will go to reduce borrowings which were a net £47.7m in the March 31 balance sheet.

Increases in core businesses limit ADT's fall to 13%

By Peggy Hollinger

ADT, the Bermuda-based electronic security and vehicle auctions company, yesterday reported a 13 per cent decline in pre-tax profits from $80.1m to $69.7m (£35m) for the first half of 1992.

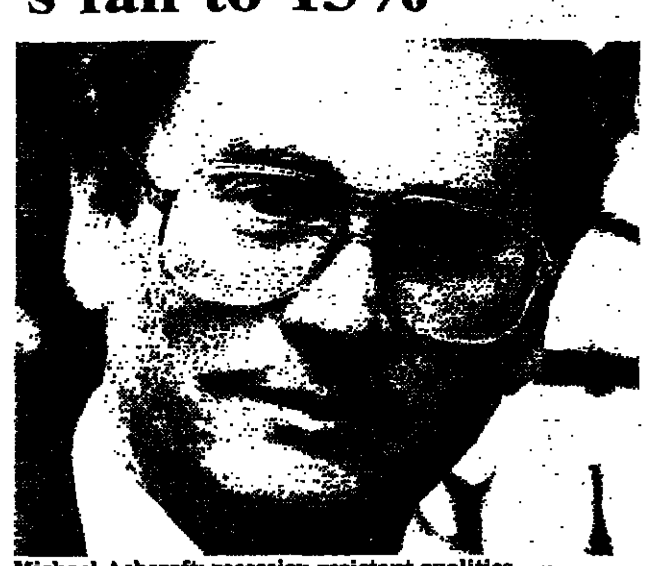
The result, struck on sales 10 per cent ahead at $677.3m, was largely in line with analysts expectations. The shares rose 11p to 400p.

Mr Michael Ashcroft, chairman, said the core businesses had retained their "recession resistant qualities". Operating profits of the security and auctions businesses had improved to $53.1m in the second quarter, compared with $50.6m in the first.

During the six months security services increased operating profits from $61.7m to $64.2m.

The auctions business reported operating profits 12 per cent down at $39.5m. The company also signalled changes in the US market, which could mean fewer products for auction. For example, car rental agencies were holding on to vehicles longer than anticipated.

Six month profits were depressed by a sharp rise in "other expenses less income" from non-core activities, from $4m to $16.2m. These included losses from a travel business and lawn care operation, which Mr Ashcroft said were highly-seasonal.



Michael Ashcroft: recession resistant qualities

Interest charges fell by $5.9m to $23.6m.

The dividend is withheld. Earnings per share for the first half fell by 7 cents to 52 cents.

● **COMMENT**

These figures lend credence to Mr Ashcroft's view of ADT as a "recession resistant" business. But the longer the recession lasts, the harder it may be to live up to the claim – as other companies are finding. The figures also go some way to polishing up ADT's image. Remaining doubts centre on such questions as whether capitalisation of some costs unfairly flatters the security profits. The biggest reservation is the onerous $1.2bn debt, including some $500m of convertible preference shares which fall due in 1994. Until investors are given some sign of how this preference share problem will be resolved, the shares are unlikely to attract confident followers. Full-year forecasts are for between $130m and $140m. The prospective p/e of about 9 is not as cheap as it looks.

Profits warning clips 7p off Eurocopy share price

By Peggy Hollinger

SHARES IN Eurocopy yesterday fell 7p to 32p following a warning from the photocopier distribution company that second half profits would show only a minor improvement over the £720,000 achieved in the first six months.

House broker Panmure Gordon cut forecasts for the year to September 30 from £3.5m to £1.5m on the news. Last year, Eurocopy reported pre-tax profits of £7m.

Mr Michael Armitage, finance director, said signs of business confidence detected immediately after the general election had since disappeared.

"After taking into account cost savings of some £200,000," Eurocopy would show only a modest improvement in the second half, he said.

Earlier this summer the company had blamed the effects of a government inquiry into the selling practices of some of its subsidiaries for the 80 per cent decline in interim profits. Mr Armitage said at the time that competition had exploited doubts sparked by the inquiry.

Eurocopy's troubles began when it purchased a Scottish photocopier company in 1989. Complaints about misleading selling practices at the subsidiary sparked an inquiry by the Office of Fair Trading.

Haynes Publishing shows sharp advance to £2.37m

HAYNES PUBLISHING Group, the Somerset-based printer of workshop manuals, staged a sharp recovery over the 12 months to May 31.

Profits before tax amounted to £2.37m, against just £26,000 in the previous year, on turnover ahead at £21.2m (£19.2m).

Mr John Haynes, chairman, said a "solid" performance in North America had supported the group during the restructuring of its UK operation.

Exceptional charges of £928,000 (£957,000) reflected the cost-cutting programme in the UK which saw the volume of titles fall by 45 per cent and 25 per cent of the workforce made redundant.

The charge also included costs of writing off unearned royalty balances and production costs.

Mr Haynes said the elimination of non-recurring costs helped the US businesses record a 58 per cent profits improvement in dollar terms. The US side ended the year in a cash positive position, he added.

Overall borrowings were cut from £4m to £1.3m over the year, with gearing falling from 47 per cent to 14 per cent. Interest charges amounted to £396,000 (£566,000).

Reflecting the recovery, earnings per share emerged at 14.5p(0.1p); a proposed final dividend of 3.5p brings the total for the year to 6p (2.5p).

F&C to manage Drayton Consolidated vehicle

By Philip Coggan, Personal Finance Editor

FOREIGN & Colonial is expected to manage the rump of Drayton Consolidated, the investment trust which is currently planning a restructuring.

Under plans already announced, the bulk of the trust's assets will be sold but the remainder will be placed in a "realisation vehicle" which will consist of the unquoted securities and the less liquid quoted shares. It is this vehicle which Foreign & Colonial is expected to manage.

Details of the restructuring are not expected to be announced for some weeks.

Drayton wrote off more than half the value of its unlisted assets in March. Investors have seen a sharp fall in the share price from 587p at its 1989 peak to 164p at yesterday's close.

Burns-Anderson offshoot in buy-out plan

By Scheherazade Daneshkhu

The management of Burns-Anderson Independent Network, a 75.1 per cent owned subsidiary of Burns-Anderson Group, the recruitment and financial services operation that went into administration receivership two weeks ago, is staging a buy-out.

Agreement in principle has been reached with Touche Ross, the administrators.

Burns-Anderson Independent Network, the third largest network of financial advisers in the country, is financially ring-fenced from its parent. It owns 24.9 per cent of the capital and is putting together a deal to buy out the rest. Mr Alan Taylor, managing director of the network, which has 375 individually registered members with Fimbra, the self-regulatory organisation, said he was hopeful the price would be satisfactory to all parties. The network made pre-tax profits of £15,000 to £20,000 in 1991 on turnover of £13m to £14m.

Investors Planning Associates, another company in the Burns-Anderson stable, said it, too, was putting together a management buy-out. "We're fed up with people owning us who did nothing for us," the company said. IPA, which has 57 Fimbra-registered individuals, said pre-tax profits amounted to less than £100,000 in 1991 on turnover of £2.4m.

NEWS DIGEST

Cost control gives lift to Macfarlane

STRICT control over costs helped Macfarlane Group (Clansman) lift profits 13 per cent in the first half of 1992.

On static turnover of £42.4m (£42.2m), pre-tax profits were £4.55m (£4.02m).

Earnings per share rose to 6.06p (5.33p) and the interim dividend is increased from 1.75p to 1.88p.

Lord Macfarlane, chairman of the Glasgow-based packaging company, said that strict cost controls would ensure the improvements would continue despite "the recession lasting longer than the economists, and others who should have known better, predicted."

At the end of the period the company had no borrowings and cash in hand of £6m.

Pipeline fittings buy for Alumasc

Alumasc, a designer, manufacturer and marketer of products for the brewery, building and construction industries, has paid £2m in cash and loan notes for Superior Pipeline Fittings, a specialist maker of pipeline fittings for the water industry.

An additional £1m is dependent on profits. Superior had net assets of £500,000 at April 5 and net borrowings of £150,000.

For the 55 weeks ended April 5 pre-tax profits totalled £460,000.

Pepe delays final results

Pepe Group is delaying the announcement of its results for the year to March 30, which had been expected last month.

The USM-quoted jeans designer and distributor is holding talks with its principal shareholders about an increase in equity and is reviewing its exceptional and extraordinary provisions, both of which will be substantial.

Losses at Arcon Intl deepen to I£367,000

Losses at Arcon International Resources, formerly known as Conroy Petroleum and Natural Resources, rose from I£145,000 to I£367,000 (£348,000) pre-tax for the six months to February 29.

Turnover totalled I£348,000 (I£15,000). Losses per share worked through at 0.0087p (0.0034p).

Flogas rises to I£7.16m

Pre-tax profits of Flogas, a distributor of liquefied petroleum gas, amounted to I£7.16m (£6.8m) for the 13 months to June 30.

That compared with I£6.74m for the 12 months to end-May 1991. The inclusion of the extra month had no impact as a break-even result was achieved for the month – in common with previous years.

Sales of the Irish Republic-based group declined to I£48.1m (I£50.5m), principally due to lower selling prices.

Net borrowings were reduced by I£1.22m to I£4.03m, some 12 per cent of shareholders' funds.

Earnings were static at 23.92p (23.78p) but a final dividend of 4.98p makes a 7.92p (7.41p) total.

Strong & Fisher tumbles to £2.17m

Strong & Fisher, the sheep skin processor and leather clothing manufacturer 70.3 per cent owned by Hillsdown Holdings, yesterday reported a 60 per cent fall in interim profits, from £5.23m to £2.17m.

Although turnover for the six months to end-June was static at £44.4m, operating profits declined from £4.3m to £675,000.

The pre-tax figure was struck after a £535,000 profit arising from the disposal of surplus land and buildings and interest receivable of £960,000 (£918,000).

Mr Michel Buswell, chairman, said the balance sheet remained strong, with healthy cash resources.

The leather division was still profitable, he added, although the second half would be adversely affected by the weakness of the dollar.

Earnings per share came out at 0.9p (2.7p) basic, or 0.8p (2p) fully diluted.

$13m US acquisition for Utd Newspapers

United Newspapers has acquired Printers Hot Line, a weekly controlled circulation advertising periodical distributed throughout the US.

The consideration was $13m (£6.5m) with $10m payable on completion and the balance annually over the next three years.

$30m disposal for John Mowlem

John Mowlem, the construction group, has agreed the sale of the scaffold erection and dismantling business of its SGB Construction Services subsidiary.

The purchase price is $30m (£15m) and the purchaser is the Brand Companies, part of Waste Management of the US.

Société Générale sells its CHL stake

Société Générale, the French banking group, has withdrawn from the UK residential mortgage market by selling its 51 per cent stake in Capital Home Loans to Crédit Foncier.

The deal, for an undisclosed sum, gives Crédit Foncier full control of CHL, a joint venture set up by the two banks in 1989. CHL currently has a mortgage book of £200m.

Belling's secured creditors likely to be paid in full

Secured and preferential creditors of Belling, the electric cooker manufacturer which went into receivership with debts of £28m in May, are likely to be paid in full, receivers from KPMG Peat Marwick told a creditors' meeting.

Mr Paul Jeffery, joint administrative receiver, said there would be a surplus, but the likely level of dividend for unsecured creditors was not yet known.

Realisations to date total £6.8m. The Belling business and assets, excluding two factory sites in Enfield, north London, and Burnley, Lancashire, were sold to Dimplex (UK) for £5.4m. The Burnley site was sold to directors of Northern Wire.

DIVIDENDS ANNOUNCED

	Current payment	Date of payment	Corres - ponding dividend	Total for year	Total last year
Dewhirst ....int	0.32†	Nov 13	0.29	-	0.72
Flogas ....fin	4.98♣	Nov 18	4.74	7.92	7.41
Haynes Publish'g ....fin	3.5	Nov 11	1	6	2.5
Macfarlane ....int	1.88	Oct 9	1.75	-	4.24
Persimmon ....int	2.8	Oct 19	2.8	-	8.6
Templeton G'lbth.....int	nil	-	7★	-	21★
Torday/Carlisle .....int	nil	-	1.5		4.5

Dividends shown pence per share net except where otherwise stated. †On increased capital. ★US cents. ♣Irish pence.

BOARD MEETINGS

The following companies have notified dates of board meetings to the Stock Exchange. Such meetings are usually held for the purpose of considering dividends. Official indications are not available as to whether the dividends are interims or finals and the subdivisions shown below are based mainly on last year's timetables.

TODAY

Interims- American Trust, Bowater, CRH, Cakebread Robey, Cussins Property, English & Overseas Properties, Grafton, Invergordon Distillers, Johnston Press, Page (Michael), Psion, Serco, Sun Alliance

Finals- Consolidated Plantations, Industrial Control Services, Isotron, SelecTV

FUTURE DATES

Interims-

ASW	Sep. 7
Avonmore Foods	Sep. 9
Blue Circle Inds	Sep 10
Boxmore Intl	Oct 21
British Mohair	Sep 10
Broad Castle	Sep. 4
City & Commercial Inv	Sep 3
Claremont Garments	Sep 7
Commercial Bank of London	Sep 10
Cons Venture Trust	Sep. 3
Emess	Sep. 10
Enterprise Oil	Sep. 10
Erith	Sep. 10
Finlay (James)	Sep. 16
Fisons	Sep. 8
Gaskell	Sep. 8
Goal Petroleum	Sep 17
Highcroft Inv Trust	Sep 24
Home Counties Newspapers	Sep. 8
Kleinwort Smaller Co's	Sep. 9
Merlin Intl Green Inv	Sep 3
Morrison (Wm) Supermkts	Sep 24
Ocean	Sep 10
Pacific Assets Trust	Sep 9
Piltenorteff	Sep 4
QS	Oct 6
Readymix	Sep 3
Record	Sep 8
Reed (Austin)	Oct. 7
Royal Dutch	Sep. 10
Severn Trent	Dec 3
Shell Transport	Sep 10
Spring Ram	Sep. 24
Stat-Plus	Sep. 9
Taylor Woodrow	Sep. 9
Thompson Clive Invs	Sep 4
Waterford Wedgwood	Sep. 3
Wilson Bowden	Sep 3

Finals-

AB Electronic	Sep. 15
Adscene	Sep 8
British Thornton	Sep 9
Everest Foods	Sep 15
MMT Computing	Nov. 6
Macro 4	Sep. 8
Scholes	Sep 15
Usher (Frank)	Sep 17

BUSINESS AND THE ENVIRONMENT

Peter Knight asks why domestic refrigerators are still not free of dangerous chlorofluorocarbons

Giving CFCs the cold shoulder

If it is possible to make a CFC-free domestic refrigerator, why don't we find them in the shops? "Technically, there is no reason why a CFC-free refrigerator cannot be produced now. The reason why there is none on the market has something to do with the cost and perhaps the manufacturers' view of the market," says Jane Gartshore of the UK-based consultants Cool Concerns.

While most industries that use CFCs have reduced their dependence on the ozone-depleting chemicals, the EC's refrigeration sector has increased their use by 4 per cent during 1986-91, according to CEFIC, the European chemical makers association.

The slow progress of domestic refrigerator makers towards eliminating their dependence on CFCs is a case of commercial hedging in the face of, some say, minor technical difficulties and major economic uncertainties.

EC countries have agreed to cease CFC production by 1997, three years before the date stipulated by the Montreal Protocol, an international agreement reached originally in 1987. The protocol is about to be re-negotiated and the phase-out date in the US and EC is likely to be brought forward to the end of 1995.

"But those dates are a long way away for people caught in a recession," says Mike Harris of ICI, which supplies CFCs and some alternatives (see box, right).

Domestic refrigerators use CFCs both as a coolant and to make the foam insulation. (The foam, which is made by blowing CFCs into polyurethane, also helps to support the refrigerator's structure.)

Refrigerator makers wanted a "drop-in" chemical replacement that they could use without incurring heavy retooling costs. This proved impossible. CFC makers quickly produced replacement refrigerants, notably HCF-134a, but the chemicals could not be used until changes were made to compressors and a new lubricant found.

The technical problems associated with 134a have now been overcome but only one domestic product in the UK, a Danish-made chest freezer sold by Iceland, uses 134a.

Refrigerator makers have rejected other coolants – such as propane and ammonia – on health and safety grounds. Ammonia is toxic and propane is highly flammable (it is used as bottled gas). Manufacturers are worried about the risks of using these alternatives in the factory, and they are concerned that there will be consumer resistance to their use in domestic refrigerators.

There are, though, technical difficulties in producing an insulation foam which is as efficient as that made with CFCs. Yet refrigerator makers have some 25 potential solutions to insulating their products. These can be divided roughly into three groups of options.

First, a reduction in CFCs. Manufacturers can use a blowing agent that is far less harmful to the ozone layer (made with a small amount of a chemical from the CFC family, R22). Bosch produces three free-standing refrigerators with such foam, although the appliances still use CFC as the coolant.

Environmentalists reject this foam technology and point to the second option, CFC-free alternatives. Pentane has been promoted in Germany by chemical maker Bayer, but manufacturers have rejected it because of flammability problems.

Manufacturers do not think the CO_2 technology is good enough to use on big production lines. Furthermore, they say they cannot afford to add extra insulation because they have to make fitted refrigerators to standard kitchen design sizes, or risk losing custom to those that do.

For the same reason they do not want to reduce the capacity of the refrigerator by encroaching on its inner dimensions. But just how much extra foam is needed is in dispute. John Missenden, of the Institute of Environmental Engineering at London's South Bank University, says it is "a matter of millimetres".

Missenden's department produced a propane-driven refrigerator with CO_2-blown foam insulation, commissioned by Greenpeace. The prototypes worked well, but no manufacturers have shown an interest in using the technology. "There's been polite applause but no manufacturers take it seriously because they don't take technology seriously," says Missenden.

The third possible foam alternative is being developed by ICI, the leading European producer of CFC substitutes. It is trying to use 134a to blow polyurethane and a product is promised in a few years.

There are other forms of insulation. These include fibre wool, expanded polystyrene and vacuum panels. The wool and polystyrene are generally rejected for being too bulky and the panels are not yet commercially available. If these alternatives were to be used, the refrigerator design would have to be changed and might need strengthening with other materials.

While a CFC-free refrigerator could be made today, manufacturers feel that the technology would only be an interim solution. Such a refrigerator will also be more expensive to make (134a is five times as costly as CFC) because of the cost of development and retooling.

Dorothy Mackenzie, of the consultancy Dragon International, says the environmental performance comes low in the ranking of consumer decisions when buying white goods. This provides insufficient stimulus for manufacturers to risk the cost of launching a new, and probably more expensive, product.

"Manufacturers were once sold the idea that people would pay a premium for green goods. They are now waking up to the fact that these premiums won't be paid," says Mackenzie. And CFC suppliers are caught in a difficult commercial position. They do not want to transfer pressure from the environmental lobby on to their customers, because that could ruin business relationships. But they need to sell more of their alternatives to recoup the enormous development costs.

"There is a general disappointment that the market has not developed as we would have liked. But the best thing for us is to do everything in our power to ease the change-over for our customers," says Harris. "But the carrot is not there and neither is the stick. There's not much more ICI or other suppliers can do at the moment."

CFCs in use
Amounts compared with 1986 base
Source: EFCTC report to EC Commission

	1986	1987	1988	1989	1990	1991
Aerosol	100	100	80	35	15	11
Refrigeration	100	102	103	108	100	104
Foams	100	112	120	111	97	87
Solvents and Miscellaneous	100	104	111	100	90	76
Total	100	104	98	73	58	51

Alternatives under scrutiny

User industries may be responding slowly to the phase-out of CFCs, but the chemical manufacturers are rapidly expanding their range of substitute materials.

The two largest manufacturers, Du Pont of the US and ICI of the UK, say they have already invested around \$900m (£452m) on research into alternatives and plants to produce them.

By the end of 1992 Du Pont will be producing 13 alternative refrigerants to replace CFCs. Four of the products are pure hydrofluorocarbons which have zero ozone depletion potential (known as ODP): HFCs 134a, 125, 152a and 32.

The remainder of Du Pont's products contain hydrofluorochlorocarbons, used either pure or in blends. These HCFCs do some damage to the ozone layer though their ODP is at most 5 per cent of CFCs. Although Greenpeace says Du Pont should not be developing HCFCs, the company says they are essential "bridging products".

Both Du Pont and ICI are concentrating on HFC 134a for large-scale manufacturing. Du Pont has two 134a plants in the US (at Ponca City, Oklahoma, and Corpus Christi, Texas) and one opening in Chiba, Japan, later this year.

ICI's original 134a plant at Runcorn in the UK will be supplemented by 134a facilities due to open in the US and Japan over the next year. The UK company will close its large CFC plant at Runcorn in 1993 and take supplies from Akzo, the Dutch company.

Du Pont and ICI will stop producing CFCs for sale in developed countries by the end of 1995, though Du Pont says it "may produce in developing countries until year end 1999 to meet domestic needs if deemed necessary under Montreal Protocol obligations".

Clive Cookson

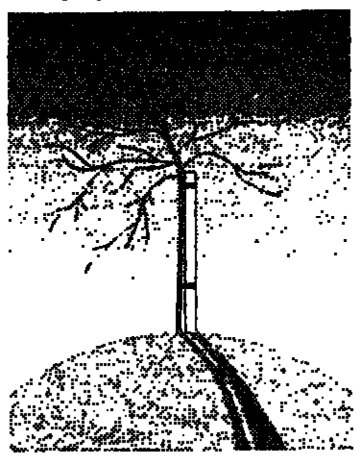
Derelict land grows on trees

By Hilary de Boerr

Sapling number 26, on a windy Welsh hillside, looks deceptively like any other young alder. With a spindly trunk and only a few leaves it struggles to survive. Yet it is part of a project which challenges conventional thinking on land reclamation.

The project, in the heavily-mined Blaenavon area in south Wales, is experimenting with an ecological approach to reclaiming derelict land - rather than the traditional approach of employing machinery and civil engineers. If successful, it could prove applicable not only to Wales, but around the world.

The idea is to use trees to generate self-sustaining soil in what is now mostly impermeable clay. The engineering approach currently adopted involves reshaping land with bulldozers. Channels and drains are created to control running waters and a thin carpet of soil is added, seeded and fertilised. The process produces green fields but time shows that such reclaimed land eventually deteriorates, requiring re-reclaiming at great expense.



The Blaenavon project is the brainchild of Martin Haigh, lecturer at Oxford Polytechnic and vice-president for the World Association of Soil and Water Conservation. He has been monitoring the reclaimed mining and industrial land in Wales for the past 21 years, examining soil erosion, soil evolution and hydrology. His work has shown that the soil in former mining areas is dying; shales brought up to the surface by mining break down into clays which clog up the imported topsoil with water and prevent plant growth.

Green fields of grass become water-logged and replaced by moss and algae, unsuitable even for grazing. Some mined land in Wales has been devoid of vegetation for more than 40 years.

Haigh's search for a solution has resulted in a surprising form of east-west technology transfer – from the environmentally-ravaged eastern bloc to Britain.

Bulgaria has been experimenting with ecological land reclamation for the past 50 years to tackle its problems. Research has shown that planting alders and other trees helps rejuvenate the soil; the tree roots bring in micro-organisms which create organic material, and that helps build up an active soil ecosystem which is self-sustaining.

Bulgaria has been forced to adopt such an approach because the country's best energy reserves lie under prime agricultural land, hundreds of acres of which are dug up every year. Reclaiming such land is a national priority, receiving the attention of Bulgaria's best scientists and research institutes.

In Wales, the long-term future of reclaimed land is a taboo issue for land reclamation agencies, says Haigh. He has had little encouragement from such established groups. "This project is at the forefront of a change in philosophy in soil reclamation," he says. Bulgarian experiments found that ecological reclamation costs one-tenth that of the UK approach because topsoil is so expensive to buy and transport. But the new method takes 10 times as long because the trees do the work naturally in their own time. "Cost is important but it's not the whole question, sustainability is," says Haigh.

Haigh expects still to be working on his project in another 21 years · his saplings will take at least 10 years to mature to the point where he can begin monitoring the soil underneath for changes.

Meanwhile, he relies on funding from a number of organisations. The BOC Foundation – a company set up by the UK industrial gases group to initiate and fund research into pollution – has committed £40,000 over two years. Earthwatch, the environmental charity, has also committed resources and manpower. Its "volunteers", who pay to spend their holidays helping out on conservation projects, have been working with Haigh, monitoring soil and sapling growth.

PEOPLE

Fox to advise ECGD

Robin Fox, vice chairman of Kleinwort Benson, has succeeded Sir Peter Leslie as chairman of the Export Guarantees Advisory Council.

Since a change in legislation last year, the Council advises the Export Credits Guarantee Department on all its activities – whereas previously it was formally consulted only in cases where "national interest" considerations applied.

Fox, 55, who was brought up in the same Cornish village as trade minister Richard Needham, has been at Kleinworts since 1961, and has in the past been heavily involved with the bank's project work.

While Kleinworts is a big arranger and provider of ECGD-backed finance, the Council has traditionally picked a clearing banker – such as Sir Peter, a career Barclays man before he became Midland's deputy chairman last year – for the post. But Fox is a well connected City figure, and, as a member of the Overseas Project Board advising the Department of Trade and Industry, also a familiar face at the DTI.

Appointed as chairman designate 12 months ago, he was given a three-year term instead of the standard five because the agency was then in a state of flux, according to ECGD. Since, the division offering short-term cover has been sold to the Dutch insurer NCM.

Now ECGD, which insures against export risk "is doing well" says Fox. "We hope we have entered a new era – though we have a big hangover [of bad debts] from the past". Last month, it resumed cover for some exports to Russia.

■ LEP GROUP, the troubled freight forwarding and security company, has appointed Wynne Denman and Brian Smith to the board, following indications last month from chairman David James that he wanted to strengthen his team with more "experienced" non-executive directors.

Denman is currently a director of Sterling Industries, Amber Industrial Holdings, North Sea Assets and FLS Aerospace. As well as joining the board, Denman will be closely involved in the management affairs of the Freight Forwarding division, the company said yesterday.

Smith is on the board of Eagle Trust, Manganese Bronze Holdings and Gerald Gobert Holdings. He was previously group managing director of The Rank Organisation. He will also be joining the Board of Lep's principal USA subsidiary, The National Guardian Corporation.

Insurance moves

■ **Ken Hazell** has been appointed operations director and a member of the committee of management of LIVERPOOL VICTORIA INSURANCE; **William Grylls**, deputy chairman, has retired.

■ **Richard Moor** has been appointed international servicing director and **Mark Webb** regional servicing director of SEDGWICK JAMES (NATIONAL) Northern region.

■ **Janet Whitehouse**, formerly vice-president, corporate development has been appointed director of strategic planning of UNUM, based in Dorking.

■ **Craig Bennett**, director of information technology at Sedgwick Group, and **Geoffrey Harrison-Dees**, general manager (marketing & sales) at Sun Life Assurance Society, have been appointed to the board of *The* EXCHANGE.

■ **Andrew Torrance** has been appointed md designate, commercial lines, of LONDON & EDINBURGH INSURANCE GROUP; he moves from Boston Consulting Group. The current md, **Jeff Slocombe**, will retire in early 1993.

Environment at Thames

Thames Water, the biggest of the privatised water companies, has promoted John Sexton, formerly head of research and laboratories, to the position of director of environment and science.

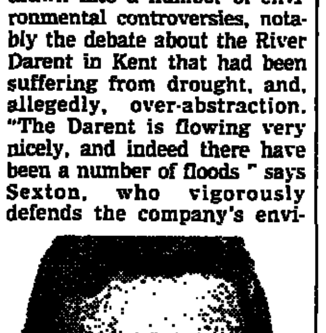
The move comes at a time when Thames, with the rest of its sector, faces increasingly heavy capital spending requirements to bring drinking and waste water up to national and European Community environmental standards.

Sexton, 43, a statistician by training, has been involved with water since leaving university in 1969. He joined Thames in 1976, initially to work on the water resources side. Following spells in water quality and environmental management, he had latterly masterminded the establishment of Thames' two new labs (replacing 25 smaller and outdated facilities), which will each handle a million and a half analyses a year.

He joins the board of Thames Water Utilities, the principal operating company.

Sexton's predecessor, Peter McIntosh, who, for personal reasons, has taken early retirement at the age of 58, did not have the additional science responsibilities.

Thames has recently been drawn into a number of environmental controversies, notably the debate about the River Darent in Kent that had been suffering from drought, and, allegedly, over-abstraction. "The Darent is flowing very nicely, and indeed there have been a number of floods " says Sexton, who vigorously defends the company's environmental record.



US and Russia allay uranium glut worries

By Kenneth Gooding, Mining Correspondent

FEARS THAT a vast additional supply of uranium would be released from military stockpiles following the sudden ending the cold war and collapse of the former Soviet Union have been allayed by the US and Russian governments.

They have initialled an agreement for the conversion of highly-enriched uranium (HEU) from dismantled Soviet nuclear weapons to low-enriched uranium (LEU) for use as commercial nuclear fuel. The agreement specifically mentions that this "will have no adverse impact on US consumers or the mining and processing industries".

The deal will be greeted with relief by western uranium producers, who are suffering severely from weak demand and prices depressed by imports from Russia.

The US and Russia have given themselves 12 months to complete an implementing contract which will provide for, among other things, the conversion of at least 10 tonnes of HEU a year in the first five years and no less than 30 tonnes a year subsequently.

The HEU will be bought by the US Department of Energy for conversion in the US and sale for commercial purposes. Uranium has only one application – for nuclear energy. Demand depends entirely on nuclear generating capacity in the 25 countries using that form of power.

The US Department will also buy for resale any LEU produced from HEU converted in Russia.

Observers suggested that the deal might escape attack by environmentalists because of its "swords into plough shares" flavour. But the method by which the HEU will be transported to the US might be a sticking point, they said.

It is understood that the US Energy Department would substitute the Russian material for higher-cost uranium produced for it in the US. This would lower the department's cost of production.

Mr David Kay, director-general of the Uranium Institute in London, pointed out yesterday that the US-Russian agreement "ensures that not all the HEU will be entering the market at once but it will be released over many years. This arrangement seems guaranteed to have a zero impact on the market by ensuring there is no vast new capacity".

He said early estimates that dismantling nuclear weapons would provide about 100,000 tonnes of uranium – or about two and a half times last year's western world sales of 38,000 tonnes – were proving wide of the mark. It was now suggested that the US and Russia would each release about 500 tonnes in this way.

Funds generated by the US-Russian deal will be used by the Russians partly to upgrade the safety of their nuclear reactors and partly to build facilities in Russia to convert HEU to LEU.

Spot prices of uranium oxide are now well below the production costs of most mines at US$ 7.75 a lb. Prices peaked at $45 a lb in 1978.

The market changed dramatically in the 1980s when brokers and other intermediaries began to act for their own accounts. By selling material from the huge stocks available in the west and latterly from Russia they have become important alternative suppliers.

PNG tries to calm fears over mine deals

By Kevin Brown in Sydney

PAPUA NEW Guinea yesterday moved to ease concern that mining agreements might be renegotiated following the recent election defeat of the former government headed by Mr Rabbie Namaliu.

Sir Julius Chan, deputy prime minister and finance minister in the new government headed by Mr Paias Wingti, said that comments made during the election campaign had been "misinterpreted".

"We are quite happy. There is no need for a re-negotiation of existing agreements between government and mining companies," Sir Julius said during a visit to Sydney.

However, he said Australian mining groups, which have made substantial investments in PNG, must become "better corporate citizens" if they wished to share in PNG's rapid development.

Disputes over land and royalty payments have disrupted several resource projects, including the Panguna copper mine on Bougainville and an alluvial gold mine at Mount Kare.

Both mines were formerly operated by CRA, the Australian mining group. Panguna has been closed ever since it was attacked in 1990 by the secessionist Bougainville Revolutionary Army. However, Mount Kare is expected to reopen soon following an agreement with Placer Pacific, which operates the nearby Porgera gold mine.

Sir Julius also said the government was considering increasing its stake in the Kutubu oil project from 22.5 per cent to 30 per cent, in line with its agreement with a group of overseas oil companies.

● Pasminco, the Australian lead and zinc group, has announced that it has offered voluntary redundancy to 1,370 workers at its Broken Hill mines in an effort to boost productivity by a third.

The company, which recently announced a net loss of A$58.6m (£21m) for the year to the end of June, said there was no ceiling on the number of redundancies that would be accepted.

Pasminco said that it wanted to increase production at Broken Hill by about 100,000 tonnes a year to 2.65m tonnes by June 1993. The redundancy offer is part of a programme aimed at increasing productivity to from 1,900 tonnes to 3,000 tonnes a year per employee.

Unsettled UK summer yields bitter fruit

Apples and potatoes have fared better than grain, but prices are disappointingly low

FARMER'S VIEWPOINT

By David Richardson

THE UNSETTLED summer of 1992 may not be proving ideal for cereals but it looks like turning out rather well for some other crops like potatoes and apples. I should stress, however, that I am referring to supply rather than prices or profitability. For, as ever, a modest excess of perishable commodities is leading to market collapse.

In theory, cereals are not all that perishable. They should be gathered into barns, dried if necessary and stored safely until required for human or animal food. For the last few years that is what has happened.

This year, however, after one of the earliest-ever starts to the UK cereal harvest, in ideal conditions, it suddenly all went dreadfully wrong. In mid-August, the main harvest month, the weather deteriorated. A series of long downpours, interspersed with heavy showers, knocked crops of wheat which had previously looked potentially reasonable, for both yield and quality, flat to the ground.

Many of those crops are still out in the fields, especially in the northern half of England and in Scotland. It is simply not possible to work a combine harvester in crops that are flat and saturated, however efficient your dryer. And now the grains are growing in the ears. Farmers will, of course, press on with the harvest whenever the weather allows, but they know already that much of what they will bring into their barns will not even be good pig feed and will therefore be worth very little.

But weather conditions have been excellent for other crops; confirmation, if it were needed, that farmers are wise if they adopt diverse cropping systems.

Apples, for instance, have looked promising since blossom time. There was little frost to damage the fruit set and the warm summer followed by the recent rain has matured the fruit two to three weeks earlier than usual. Even the strong winds over the bank holiday weekend will have done little damage to a crop which these days is mainly grown behind high wind-breaking hedges and on trees trained, for ease of picking, to grow to no more than head height.

So, this week fruit growers across the country expect to start picking their main variety - traditional Coxes. Reports suggest that it will be an excellent crop for quantity and quality almost everywhere. But prices seem set to be disappointing.

The estimated size of the UK crop is, in fact, only a little above average. But there are other factors that will help keep wholesale prices low. The first is a large quantity of southern hemisphere fruit, picked last winter, shipped to this country and since held in UK cold stores. Fruit traders describe the apples as "tired" but the fact remains that they have to be disposed of at almost any price and in the meantime overhang the market for freshly picked home grown apples.

The second reason for UK growers concern is the massive apple crops grown in Europe. Conditions have been ideal across the continent and current estimates that the total EC metric tonnage for picking this year is around 10m tonnes. Last year Europe's apple growers produced a mere 5.7m tonnes and the long term average is nearer 8m tonnes. All of which adds up to a depressed English apple market with best fruit wholesaling at present at not much more than 20p a lb, packed and graded. When the cost of packing, transport and market commission can come to 15p a lb it is clear that there is an inadequate margin left to cover all the costs of growing and picking, let alone leave a profit for the orchard owner.

Incidentally, by way of research for this article, at the weekend I bought a fraction over a lb of fresh English gala apples in a well known multiple store. . . they cost me 99p. Not a bad mark-up! It is nice to know the supermarkets are not suffering like their suppliers.

In any event it seems probable that the European Community's scheme to stabilise the apple market in times of glut will be activated again this year. It is triggered at the request of marketing co-operatives when prices fall to unprofitable levels. The EC authorities then intervene in the market to take some of the surplus off the market. The fruit they buy is either buried or fed to livestock.

Use of the scheme in the UK is usually limited to taking a tiny percentage of surplus Bramley cooking apples off the market. But in France and Italy, where much bigger tonnages of varieties such as golden delicious can be grown, the intervention price itself can be profitable. And there is a great deal of suspicion in the UK that some of the "destroyed" fruit ends up in apple pies.

The UK Potato Marketing Board announced its intervention buying programme for maincrop produce last week. This too follows forecast of a massive surplus and the collapse of the market price to £38 a tonne. The board's buying-in price is £33 a tonne and the purchased tonnages will be offered to livestock farmers for feed. As with apples, prices have collapsed because of a perceived surplus. Some so-called experts have estimated that the UK may have grown up to a 1m-tonne surplus this year (against average production of about 6m tonnes). But others point to the high incidence of diseases such as blight, black leg and powdery scab, which may mean that the tubers will rot in store. It is also possible, say the moderates, that these estimates of very big crops have failed to account for the fact that irrigation as had little effect this year.

Meanwhile potato growers are angry that while they are receiving as little as 2p for a lb for potatoes, supermarkets are still charging consumers up to 20p a lb.

Doubtless the buyers for the multiples feel they are quite safe in screwing down prices paid to UK farmers as they know there are plenty of alternative supplies just across the English Channel. There are big potato crops in The Netherlands, Belgium, France and Germany and between them these countries have planted an extra 60,000 hectares (150,000 acres) this year.

Moreover the price of potatoes in Belgium, for instance, where there is the largest surplus, has fallen to only about £20 per tonne. No European farmer can grow potatoes profitably at that sort of price. Indeed, it seems probable that many UK growers who have to rely on the PMB's fall-back price will also lose a lot of money this year.

After all it costs between £2,000 and £3,000 a hectare (£800-1,200 an acre), depending on the system used, to grow potatoes, and it takes an incredibly good crop to yield more than 62.5 tonnes a hectare (25 tonnes an acre).

But the UK does, at least, control the acreage of potatoes grown through a quota scheme operated by the PMB and this limits any surplus, even in a good year. Furthermore, buying programmes to support and stabilise markets, like that announced last week, are funded by growers themselves. For all its faults, the system does work and is the envy of some continental growers.

It is reported, however, that Mr John Gummer, the Minister of Agriculture, is seeking to abolish these statutory powers. Moreover, he is planning this just months after he agreed with the other agricultural ministers of the EC to introduce volume control for other farm commodities.

Does he seek to bring about the same kind of chaos in UK potato markets as exists on the continent? Could this possibly be in the best interests of either producers or consumers of potatoes? How can it possibly be consistent to try to control the production of one batch of food crops while deliberately encouraging over-production of another? I think we should be told.

MINOR METALS PRICES

Prices from Metal Bulletin (last week's in brackets).

ANTIMONY: European free market 99.6 per cent, $ per tonne, in warehouse, 1,720-1,750 (same).

BISMUTH: European free market, min. 99.99 per cent, $ per lb, tonne lots in warehouse, 2.30-2.60 (same).

CADMIUM: European free market, min. 99.5 per cent, $ per lb, in warehouse, 0.65-0.85 (same).

COBALT: European free market, 99.5 per cent, $ per lb, in warehouse, 19.00-21.00 (same).

MERCURY: European free market, min. 99.99 per cent, $ per 76 lb flask, in warehouse, 135-150 (same).

MOLYBDENUM: European free market, drummed molybdic oxide, $ per lb Mo, in warehouse, 2.33-2.38 (same).

SELENIUM: European free market, min 99.5 per cent, $ per lb, in warehouse, 4.80-5.50 (same).

TUNGSTEN ORE: European free market, standard min. 65 per cent, $ per tonne unit (10 kg) WO_3, cif, 53-62 (same).

VANADIUM: European free market, min. 98 per cent, $ a lb V_2O_5, cif, 2.00-2.15 (same).

URANIUM: Nuexco exchange value, $ per lb, U_3O_8, 7.75 (same).

Traders assess rapeseed damage

By Robert Gibbens in Montreal

WINNIPEG TRADERS were yesterday assessing the extent of the crop damage from early snow and frost in key Canadian producing areas that caused rapeseed futures to jump sharply at the city's commodity exchange on Monday.

During the morning the November position eased to C$304 (£128) a tonne from the C$305.40 reached on Monday. That day had seen a rise of $9, almost reaching the daily limit on price movements, which extended the advance over the past month to about 7 per cent. Flax seed futures had jumped the full C$10 limit on Monday. Other oil seeds prices were up more modestly.

Mr Jim Hamilton, grains co-ordinator at James Richardson & Sons, Winnipeg, said the extent of the damage to crops under snow and the potential for harvest could not be known for a week or so. Cool, damp weather is forecast to continue until at least September 10.

"The rapeseed crop is two weeks late because of the weather, but it will be several weeks before harvesting can begin," said Mr Hamilton. "Farmers could face problems in delivering against September contracts, but nothing is sure yet."

● European Community July-September soyabean crushings may be 16 per cent higher than in the same quarter last year as crushers seek alternatives to this year's much-reduced rapeseed crop, according to the Oil World newsletter, reports Reuter from Hamburg.

"With rapeseed and products pricing themselves out of the market, consumers are shifting particularly to soyoil and meal," the weekly publication says. It forecasts EC soyabean crushings at 3.35m tonnes in July-September from 2.88m tonnes last year and 2.81m in 1990.

The accelerating demand for soya products in Europe has provided a fillip to crushing margins. Oil World calculates that gross soyabean crushing margins averaged DM28 (£10) a tonne in August up from DM26 in July and only DM12 in May. Last August the average was DM16 and two years ago it was minus DM6.

Coconut output 'to fall'

By William Keeling in Jakarta

WORLD COCONUT production will decline this year and next leading to sharp falls in exports of coconut products, according to the Asian and Pacific Coconut Community.

Coconut production will reach 8.524m tonnes, copra equivalent, this year, down 3.2 per cent on 1991, and will drop to 8.452m tonnes in 1993. However, the decline in exportable supplies of coconut products will be larger because of a prolonged drought in the Philippines, the world's leading exporter.

The drought has "thwarted the prospects of a recovery in the Philippines coconut production later this year and early 1993", the association says in the latest edition of Cocomunity, its official publication.

The APCC forecast 1993 production in the Philippines' at 1.7m tonnes copra equivalent, continuing a steady decline from a high of 2.8m tonnes in 1990. The Philippines' exports of coconut oil are likely to fall 30 per cent this year to 620,000 tonnes, with world exports down 19 per cent to 1.1m tonnes.

World exports of copra meal are forecast to fall by 9 per cent in 1992 to 980,000 tonnes and further to 949,500 next year. The APCC expects world exports of desiccated coconut to reach 185,500 tonnes this year, down 3.6 per cent on 1991, and to drop slightly to 181,500 in 1993.

WORLD COMMODITIES PRICES

MARKET REPORT

London COCOA prices dived, weighed down by fund liquidation in New York, with traders struggling to find any fundamental reason for the drop. Traders said there were no fresh figures on crop sizes and if anything, the recent weather reports of limited rain in West Africa were supportive to prices. "It looks like stale liquidation – there do not necessarily seem to be any origins around. We certainly seemed to be limited on the upside, but I think the downside potential is limited as well," one trader said. Some traders were also talking of supply and demand being evenly balanced in the coming season rather than in outright deficit. The weakness of the dollar helped to underpin GOLD on the London bullion market and COPPER on the LME. Copper's cheapness in local currencies could stimulate some consumer interest in European and Asian markets, traders said. This should also be true for other metals but they continue to respond sluggishly to the currency factor, probably because of their relatively high stock levels. New York COTTON was lower at midday, scoring lifetime lows for the fifth straight session, mainly on technically driven selling.

Compiled from Reuters

London Markets

SPOT MARKETS

Crude oil (per barrel FOB)(Oct)		+ or -
Dubai	$17.90-95	-0.025
Brent Blend (dated)	$19.80-90	+.175
Brent Blend (Oct)	$20.00-05	+0.15
W T I (1 pm est)	$21.55-60	+0.30
Oil products (NWE prompt delivery per tonne CIF)		+ or -
Premium Gasoline	$219-221	+5.5
Gas Oil	$182-183	+5
Heavy Fuel Oil	$84-86	
Naphtha	$195-197	+2.5
Petroleum Argus Estimates		
Other		+ or -
Gold (per troy oz)♣	$342.45	+2.45
Silver (per troy oz)♣	375.5c	+4
Platinum (per troy oz)	$360.25	+3.5
Palladium (per troy oz)	$87.3	+0.8
Copper (US Producer)	115.0c	-1
Lead (US Producer)	40.1c	+0.7
Tin (Kuala Lumpur market)	16.79r	
Tin (New York)	316.50c	
Zinc (US Prime Western)	62.0c	
Cattle (live weight)†	110.29p	-0.61*
Sheep (live weight)†♣	71.99p	-1.85*
Pigs (live weight)†	79.82p	-1.40*
London daily sugar (raw)	$266.00w	+0.2
London daily sugar (white)	$278.70w	+1.7
Tate and Lyle export price	£236.50	-0.5
Barley (English feed)	Unq	
Maize (US No. 3 yellow)	£148.0	
Wheat (US Dark Northern)	Unq	
Rubber (Oct)♥	49.75p	-0.25
Rubber (Nov)♥	49.75p	-0.25
Rubber (KL RSS No 1 Jul)	216.0m	-0.5
Coconut oil (Philippines)§	$625.0t	+5
Palm Oil (Malaysian)§	$390.00y	-10
Copra (Philippines)§	$330.0	
Soyabeans (US)	£130.0	-1
Cotton "A" index	57.05c	-0.4
Wooltops (64s Super)	364p	

£ a tonne unless otherwise stated. p-pence/kg. c-cents/lb r-ringgit/kg. t-Oct/Nov w-Aug/Sep y-Sep d-Oct. z-Oct/Dec. †Meat Commission average fatstock prices.* change from a week ago ♥London physical §CIF Rotterdam. ♣ Bullion market close. m-Malaysian cents/kg. ♣Sheep prices are now live weight prices

SUGAR – London FOX ($ per tonne)

Raw	Close	Previous	High/Low	
Oct	207.00	206.80	207.00	207.00
Dec	197.00	197.40	197.00	197.00
Mar	196.40	195.60	196.40	196.40
May	196.40	196.00	196.40	196.40
White	**Close**	**Previous**	**High/Low**	
Oct	259.30	261.50	263.00	258.00
Dec	254.30	256.00	257.50	253.50
Mar	257.00	258.00	260.00	255.50
May	259.80	260.50	259.80	259.80

Turnover: Raw 70 (82) lots of 50 tonnes. White 1069 (1001) Paris- White (FFr per tonne): Oct 1232.36 Dec 1224.00

CRUDE OIL – IPE ($/barrel)

	Close	Previous	High/Low	
Oct	20.13	19.87	20.15	19.90
Nov	20.16	19.93	20.16	19.98
Dec	20.17	19.99	20.17	20.01
Jan	20.10	19.87	20.10	19.95
Feb	19.98	19.76	20.00	19.91
Feb	19.69	19.51	19.73	19.73
Feb	19.63	19.38	19.63	19.63
IPE Index	19.81	19.80	19.81	19.81

Turnover 26487 (20209)

GAS OIL – IPE ($/tonne)

	Close	Previous	High/Low	
Sep	181.75	178.50	182.00	180.50
Oct	185.75	182.25	186.00	184.25
Nov	188.75	186.75	188.75	187.25
Dec	191.00	187.50	191.00	189.25
Jan	191.00	188.25	191.25	189.75
Feb	188.00	185.25	188.00	187.00
Mar	183.00	181.25	183.50	183.00
Apr	179.60	178.50	180.50	179.50
May	178.75	177.25	178.75	

Turnover 14213 (10886) lots of 100 tonnes

JUTE

C and F Dundee; BTC US$390, BWC US$425, BTD US$360, BWD US$370.C and F Antwerp; BTC US$370, BWC US$370, BTD US$345, BWD US$345.

COCOA – London FOX (£/tonne)

	Close	Previous	High/Low	
Sep	579	595	600	578
Dec	606	628	630	601
Mar	637	657	659	632
May	656	676	678	653
Jul	675	695	696	675
Sep	694	713	712	694
Mar	748	768	765	748
May	767	785	767	767

Turnover: 5533 (6243) lots of 10 tonnes
ICCO indicator prices (SDRs per tonne). Daily price for Aug 28 805.89 (813.80) 10 day average for Aug 31 817.50 (814.73)

COFFEE – London FOX ($/tonne)

	Close	Previous	High/Low	
Sep	733	734	740	728
Nov	757	760	765	755
Jan	769	772	778	768
Mar	780	785	792	779
May	792	798	802	792
Jul	810	809	812	810

Turnover 2942 (3792) lots of 5 tonnes
ICO indicator prices (US cents per pound) for Aug 28: Comp. daily 46.15 (46.06) 15 day average 45.46 (45.50)

POTATOES – London FOX (£/tonne)

	Close	Previous	High/Low	
Apr	61.5	59.5	61.5	61.0

Turnover 23 (60) lots of 20 tonnes.

SOYAMEAL – London FOX (£/tonne)

	Close	Previous	High/Low
Dec	118.50	119.00	118.50
Feb	120.50	121.00	120.50

Turnover 40 (20) lots of 20 tonnes.

FREIGHT – London FOX ($10/index point)

	Close	Previous	High/Low	
Sep	1100	1099	1100	1090
Oct	1170	1175	1175	1165
Nov	1170	-	1175	1170
Jan	1213	1220	1213	1210
Apr	1270	1255	1270	
Jul	1110	1110	1110	1100
Oct	1285	1288	1285	
Jan	1310	1306	1310	
BFI	1069	1073	1069	

Turnover 265 (33)

GRAINS – London FOX (£/tonne)

Wheat	Close	Previous	High/Low	
Sep	113.25	113.10	113.25	
Nov	115.95	115.75	115.95	115.75
Jan	119.40	119.20	119.40	119.20
Mar	122.35	122.35	122.35	
May	125.60	125.40	125.60	
Barley	**Close**	**Previous**	**High/Low**	
Nov	-	112.75		

Turnover: Wheat 125 (243), Barley 0 (36).
Turnover lots of 100 Tonnes.

PIGS – London FOX (Cash Settlement) p/kg

	Close	Previous	High/Low
Nov	105.5	106.0	105.5

Turnover 2 (27) lots of 3,250 kg

LONDON METAL EXCHANGE (Prices supplied by Amalgamated Metal Trading)

	Close	Previous	High/Low	AM Official	Kerb close	Open Interest
Aluminium, 99.7% purity ($ per tonne)						Total daily turnover 22,047 lots
Cash	1294.5-5.5	1298.5-9.5	1295.5/1295.5	1295.5-6.0		
3 months	1318.5-9.0	1322-2.5	1324/1318	1319-9.5	1318-8.5	175,600 lots
Copper, Grade A (£ per tonne)						Total daily turnover 29,115 lots
Cash	1249.5-50.5	1258.5-7.5	1278/1265	1244-5	1277-8	
3 months	1275-5.5	1281-2	2510/2483	1270.5-1.0	2506	148,994 lots
Lead (£ per tonne)						Total daily turnover 6,952 lots
Cash	332-3	337-8	333/332.5	332-2.5		
3 months	337-8	341-2	341/335	338-8.5	335-6	26,591 lots
Nickel ($ per tonne)						Total daily turnover 6,604 lots
Cash	7190-200	7230-40	7170/7170	7175-80		
3 months	7270-5	7305-10	7290/7280	7255-60	7280-90	28,833 lots
Tin ($ per tonne)						Total daily turnover 1,998 lots
Cash	6830-40	6800-05		6825-30		
3 months	6855-65	6825-30	6870/6840	6850-60	6865-70	11,539 lots
Zinc, Special High Grade ($ per tonne)						Total daily turnover 11,351 lots
Cash	1408-10	1414-6	1405/1401	1407-7.5		
3 months	1369-70	1376-7	1374/1366	1367-8	1369-70	64,384 lots

LME Closing £/$ rate:
SPOT: 1.9970q | 3 months: 1.9635 | 6 months: 1.9246 | 9 months: 1.8659

LONDON BULLION MARKET (Prices supplied by N M Rothschild)

Gold (troy oz)	$ price	£ equivalent
Close	342.30-342.60	
Opening	342.70-343.00	
Morning fix	342.65	171.692
Afternoon fix	341.70	171.235
Day's high	343.20-343.50	
Day's low	341.60-341.90	

Loco Ldn Mean Gold Lending Rates (Vs US$)

1 month	2.76	6 months	2.72
2 months	2.74	12 months	2.75
3 months	2.72		

Silver fix	p/troy oz	US cts equiv
Spot	188.03	375.50
3 months	193.05	378.30
6 months	196.10	381.60
12 months	206.50	389.10

GOLD COINS

	$ price	£ equivalent
Krugerrand	340.00-341.00	171.00-173.00
Maple leaf	352.35-354.65	-
New Sovereign	82.00-84.00	42.00-44.00

TRADED OPTIONS

Aluminium (99.7%)	Calls		Puts	
Strike price $ tonne	Sep	Dec	Sep	Dec
1250	61	90	3	10
1300	25	56	16	25
1350	6	30	47	49
Copper (Grade A)	**Calls**		**Puts**	
2500	42	68	35	72
2550	21	47	64	101
2600	9	32	102	134
Coffee	**Nov**	**Jan**	**Nov**	**Jan**
700	70	85	13	16
750	39	64	32	35
800	20	33	63	64
Cocoa	**Dec**	**Mar**	**Dec**	**Mar**
600	33	66	27	29
625	23	52	42	40
650	15	41	59	44
Brent Crude	**Oct**	**Nov**	**Oct**	**Nov**
2000	24	45	20	39
2050	7	26	19	
2100	2	18		

New York

GOLD 100 troy oz.; $/troy oz.

	Close	Previous	High/Low	
Sep	340.8	342.7	0	0
Oct	341.7	343.6	343.6	341.5
Nov	342.5	344.4	0	0
Dec	343.4	345.3	345.7	342.8
Feb	345.1	347.0	347.0	344.8
Apr	346.8	348.7	348.0	346.8
Jun	348.6	350.5	0	0
Aug	350.4	352.3	0	0
Oct	352.3	354.2	0	0

PLATINUM 50 troy oz; $/troy oz.

	Close	Previous	High/Low	
Oct	357.7	360.9	362.5	355.7
Jan	354.0	367.0	359.5	352.0
Apr	354.0	357.0	0	0
Jul	355.0	358.0	0	0

SILVER 5,000 troy oz; cents/troy oz.

	Close	Previous	High/Low	
Sep	371.4	373.0	373.0	370.5
Oct	372.2	373.8	0	0
Nov	373.2	374.8	0	0
Dec	375.0	376.7	378.0	373.5
Jan	376.3	378.0	0	0
Mar	378.8	380.5	381.5	378.0
May	381.5	383.2	0	0
Jul	384.1	385.8	0	0
Sep	386.9	388.6	386.5	386.5
Dec	391.2	392.9	393.0	392.0

HIGH GRADE COPPER 25,000 lbs; cents/lbs

	Close	Previous	High/Low	
Sep	111.20	109.50	111.60	109.85
Oct	111.65	110.00	112.10	110.50
Nov	112.10	110.50	112.40	112.40
Dec	112.50	110.85	113.10	110.95
Jan	112.45	110.80	112.60	112.60
Feb	112.30	110.70	0	0
Mar	112.25	110.65	112.50	110.60
Apr	111.50	109.90	0	0
May	111.35	109.75	0	0
Jun	110.70	109.10	0	0
Jul	110.70	109.10	0	0

CRUDE OIL (Light) 42,000 US galls $/barrel

	Close	Previous	High/Low	
Oct	21.64	21.48	21.68	21.39
Nov	21.48	21.37	21.52	21.27
Dec	21.41	21.30	21.44	21.21
Jan	21.30	21.20	21.32	21.11
Feb	21.19	21.10	21.20	21.07
Mar	21.09	21.01	21.09	21.00
Apr	20.98	20.91	20.97	20.91
May	20.87	20.81	20.88	20.80
Jun	20.77	20.71	20.80	20.71
Jul	20.68	20.62	20.68	20.67

HEATING OIL 42,000 US galls, cents/US galls

	Close	Previous	High/Low	
Oct	61.17	60.90	61.60	60.30
Nov	62.15	61.90	62.45	61.35
Dec	63.25	63.01	63.45	62.45
Jan	63.65	63.45	63.60	62.90
Feb	62.50	62.55	62.70	0
Mar	60.43	60.55	60.65	60.30
Apr	58.53	58.75	58.70	
May	57.20	57.45	57.40	57.00
Jun	56.33	56.60	56.35	

COCOA 10 tonnes;$/tonnes

	Close	Previous	High/Low	
Sep	1000	1057	1025	1000
Dec	1044	1092	1083	1040
Mar	1097	1140	1134	1093
May	1125	1170	1156	1124
Jul	1154	1195	1176	1176
Sep	1184	1222	1204	1204
Dec	1224	1265	0	0
Mar	1259	1298	0	0
May	1290	1329	0	0

COFFEE "C" 37,500lbs; cents/lbs

	Close	Previous	High/Low	
Sep	53.25	52.90	53.25	52.20
Dec	54.70	54.20	54.85	53.85
Mar	56.55	56.45	56.80	55.85
May	60.35	60.20	60.40	59.50
Jul	62.25	62.50	62.25	61.75
Sep	64.10	64.60	64.60	64.10

SUGAR WORLD "11" 112,000 lbs; cents/lbs

	Close	Previous	High/Low	
Oct	8.96	9.23	9.21	8.87
Mar	8.78	8.95	8.91	8.66
May	8.80	8.96	8.90	8.76
Jul	8.79	8.96	0	0
Oct	8.75	8.90	8.78	8.75

COTTON 50,000; cents/lbs

	Close	Previous	High/Low	
Oct	55.90	58.46	58.75	55.80
Dec	54.55	54.67	55.05	54.40
Mar	55.45	55.58	55.85	55.35
May	56.38	56.40	56.65	56.24
Jul	57.00	57.10	57.50	56.95
Oct	58.49	58.55	58.45	58.40
Dec	58.95	59.06	59.30	59.00

ORANGE JUICE 15,000 lbs; cents/lbs

	Close	Previous	High/Low	
Sep	113.00	113.88	114.26	113.00
Nov	109.25	109.00	109.46	108.40
Jan	108.85	108.60	109.10	108.30
Mar	108.70	108.75	109.50	108.70
May	109.60	109.25	0	0
Jul	109.10	108.75	0	0
Sep	109.10	108.75	0	0
Nov	109.10	108.75	0	0

INDICES

REUTERS (Base: September 18 1931 = 100)

Sep.1	Aug.28	mnth ago	yr ago
1516.6	1518.6	1541.7	1516.6

DOW JONES (Base: Dec. 31 1974 = 100)

	Aug.31	Aug.28	mnth ago	yr ago
Spot	117.93	116.26	116.87	116.93
Futures	115.66	115.67	117.58	122.31

Chicago

SOYABEANS 5,000 bu min; cents/60lb bushel

	Close	Previous	High/Low	
Sep	552/2	550/4	556/4	551/4
Nov	546/2	541/0	548/6	542/6
Jan	552/2	548/2	555/4	550/0
Mar	560/0	556/0	563/2	557/4
May	567/0	562/2	569/0	564/4
Jul	573/0	568/2	575/4	571/0
Aug	573/0	570/4	577/0	573/0
Sep	569/4	568/0	572/4	569/0
Nov	571/6	569/0	576/4	571/4

SOYABEAN OIL 60,000 lbs; cents/lb

	Close	Previous	High/Low	
Sep	18.07	18.16	18.38	18.06
Oct	18.21	18.28	18.50	18.20
Dec	18.49	18.58	18.80	18.46
Jan	18.66	18.76	18.92	18.65
Mar	18.97	19.06	19.26	18.97
May	19.27	19.34	19.51	19.27
Jul	19.52	19.58	19.78	19.52
Aug	19.67	19.73	19.85	19.67
Sep	19.78	19.83	19.95	19.78

SOYABEAN MEAL 100 tons; $/ton

	Close	Previous	High/Low	
Sep	175.7	175.6	177.0	175.6
Oct	191.9	190.6	192.4	191.2
Dec	191.0	189.6	191.4	190.0
Jan	190.0	188.3	190.1	189.1
Mar	189.1	187.3	189.2	187.9
May	188.5	188.7	189.0	188.0
Jul	189.3	187.5	189.7	189.3
Aug	189.0	187.5	0	0
Sep	189.2	187.8	0	0
Oct	189.5	189.2	0	0

MAIZE 5,000 bu min; cents/56lb bushel

	Close	Previous	High/Low	
Sep	220/6	218/6	221/2	218/4
Dec	220/0	217/2	220/6	217/2
Mar	229/0	225/6	229/2	225/4
May	234/6	231/6	235/0	232/0
Jul	239/4	237/0	239/6	237/0
Sep	239/4	236/4	239/4	237/0
Dec	243/0	240/4	243/2	240/6

WHEAT 5,000 bu min; cents/60lb-bushel

	Close	Previous	High/Low	
Sep	325/2	319/6	327/0	322/0
Dec	337/6	333/0	339/0	334/4
Mar	344/4	340/2	345/0	341/4
May	340/2	336/4	341/0	336/0
Jul	319/0	317/2	322/0	317/0
Sep	325/0	321/4	325/4	323/0

LIVE CATTLE 40,000 lbs; cents/lbs

	Close	Previous	High/Low	
Oct	73.550	73.750	73.900	73.475
Dec	72.400	72.550	72.850	72.375
Feb	71.575	71.725	71.800	71.550
Apr	72.525	72.675	72.750	72.500
Jun	69.475	69.550	69.600	69.475
Aug	68.200	68.275	68.500	68.150
Oct	68.400	68.500	68.500	68.400

LIVE HOGS 40,000 lb; cents/lbs

	Close	Previous	High/Low	
Oct	40.000	40.050	40.025	39.500
Dec	40.975	40.600	41.000	40.400
Feb	40.525	40.250	40.550	39.875
Apr	38.900	38.600	38.900	38.400
Jun	44.400	44.350	44.450	44.225
Jul	44.450	44.400	44.450	44.250
Aug	43.300	43.250	43.300	43.200
Oct	40.300	40.300	40.300	40.300

PORK BELLIES 40,000 lbs; cents/lb

	Close	Previous	High/Low	
Feb	39.975	39.450	40.000	39.250
Mar	39.700	39.225	39.750	39.150
May	40.950	40.600	40.950	40.300
Jul	41.000	40.400	41.000	0

LONDON STOCK EXCHANGE

Equities wilt under further pressure

By Steve Thompson

A TRADING session that threatened to record one of the lowest daily turnovers of the year so far on the London Stock Exchange was rescued by a chunky programme trade in mid-afternoon.

But, even some big trades triggered by the programme failed to prevent the equity market from slipping back below the 2,300 level on the Footsie. Fund managers remained preoccupied with trends in international currencies which prompted worries about the possibility of a rise in UK interest rates and the Maastricht referendum in France scheduled for September 20 which is seen as threatening the fabric of the ERM.

And, sentiment in a market desperately searching for any sort of good news was given another dent by more bad news from a building sector expected to produce some dire results in the next few weeks.

The return to work after the long Bank holiday weekend saw the market open marginally firmer, helped by a weekend Press indicating that the immediate pressure for a rise in UK rates had largely passed. However, a build-up of selling in the Footsie future and signs of more pressure on the dollar led to a slide in the cash market. The Footsie index saw a small opening rise turned quickly into a loss of some seven points by mid-morning.

With sterling said to have been caught in the crossfire between the dollar and the D-Mark, the equity market took a further hit after lunch when hints of a trading programme were put forward as another reason behind the selling in leading stocks.

Conclusive evidence of programme trade activity came as a series of large deals flashed across the market's Seaq trading screens. One of the UK's big integrated securities houses was said to have carried out the programme which was said to have been weighted to the sell side.

The Footsie 100 index reached the day's lowest level, a fall of 16.1 at 2,296.5, as the large trades were in the process of being unwound by marketmakers, but thereafter showed signs of stabilising to close 14.2 down at 2,298.4.

Turnover, despite being boosted by the programme trade, could only reach 312.9m. Customer business in the equity market has reached £1bn on only one occasion during the past two weeks.

Analysts and traders expect the market to trade in a narrow range ahead of the French referendum and pointed out that under French law no new opinion polls are allowed. But, one senior trader said that as soon as the Maastricht referendum is over fund managers will have to come to terms with an even bigger affair in the form of the US Presidential election in November.

The electricity distribution stocks ("recs") were aggressively sold ahead of the cessation of trading in the Electricity Package tomorrow; dealers are reluctant to take on stock in the more illiquid "recs" as institutions unbundle their remaining Packages.

The housebuilding sector provided the market's three weakest performers in percentage terms after Persimmon, the highly-rated construction group announced disappointing figures.

Account Dealing Dates

*First Dealings:		
Aug 10	Aug 24	Sep 7
Option Declarations:		
Aug 20	Sep 3	Sep 17
Last Dealings:		
Aug 21	Sep 4	Sep 18
Account Day:		
Sep 1	Sep 14	Sep 28

*New time dealings may take place from 8.30 am two business days earlier.

Fisons up on drug stories

THE RUMOUR factory got to work on Fisons ahead of the pharmaceutical group's interim results, scheduled for release next week. Old speculation that a bid for the group was imminent resurfaced, as did the recurring story that Fisons' Opticrom drug is to be reinstated in the US. The shares jumped 12 in early trade and then drifted with the market to close a net 5 ahead at 173p.

Hoare Govett, which was recommending the shares last week, was blamed for the rumours. However, Hoare's Mr James Culverwell was keen to disassociate himself. "I think there is no prospect of a bid in the near term," said Mr Culverwell.

He was also sceptical about the imminent return of Opticrom and argued that the shares were merely recovering after being oversold. ICI, which was pinpointed as the potential bidder for Fisons, dipped 2 to 1063p.

Courtaulds weak

Chemicals group Courtaulds fell sharply in early trading as an agency broker lowered its forecasts for the company. The shares were down 20 at one stage and closed 17 off at 412p.

James Capel cut its forecast for the year ending March 1993 by £15m to £200m and for the following year by the same amount to £220m. Capel analyst Mr David Ingles said the reduction reflected pressures in various businesses throughout the world and the weakness of the Australian and US dollar.

The new current year prediction compares with an existing range of between £210m and £215m but it was felt that estimates are about to be adjusted. Capel said the prospect of a general review had prompted it to remain cautious on the stock in spite of believing that the shares are almost at a support level.

Shares in leisure group Rank Organisation were friendless and retreated sharply after securities house Kleinwort Benson weighed in with a profits downgrading.

With an eye on last week's profits warnings and downgrades in the brewing sector, Kleinwort reduced its current year estimate for Rank by £17m to £228m, and the following year's by a more severe £34m to £287m. The securities house cited concern about the company's level of business at Butlin's holiday worlds, and at Rank's holiday centre operator Haven and Warner, as well as in its casinos, discos and North American leisure interests. Rank closed 14 weaker at 490p after thin trading for the stock.

Automotive and aerospace group Lucas Industries came under further pressure as worries over the dividend intensified, sending the shares tumbling to a 7½-year low. Sentiment was also depressed by news that members of the company's staff pension fund are suing the fund's trustees over the transfer of money to Lucas towards the end of last year.

The stock finished 5 down at 78p, its lowest level since January 1985, after brisk turnover of 2.5m shares.

Mr John Goldschmidt at broker Charterhouse Tilney, however, remained unconvinced about the likelihood of a dividend cut, and said the continued decline of the share price made the company a bid target. He added: "If the Lucas share price stays at current levels over the next six months, a bid is a racing certainty because there is value in the company."

Unravelling of the Electricity Package ahead of its demise tomorrow put it, and most of the related utilities, under pressure. The package fell £85 to £3155.

Builders were under continuing pressure following gloomy statistics last week and worries about a possible rise in interest rates. George Wimpey, the UK's second biggest housebuilder, dropped 12 to 85p on growing concern over the safety of the dividend, and Barratt Developments slid 8 to 41p.

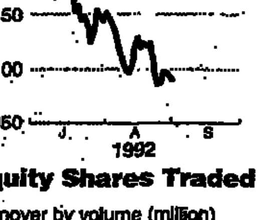
North of England housebuilder Persimmon plunged 25 to 148p as first-half profits of £7.25m, at the bottom of the range of expectations, prompted forecast cuts. BZW came down to £15m from £19m for the current year, and by £4.5m to £17.5m for 1993.

Electrical and engineering group GEC bucked the market trend and picked up 3½ to 237p, with Hoare Govett reiterating its buy stance after press reports that the group's defence division had won a £50m order for in-flight entertainment. Hoare said GEC has set a target of half of its defence sales coming from the civil market by the end of the century.

British Gas continued to slide after disappointing interims last week. S.G. Warburg reiterated its sell recommendation and published a note confirming its reduced profits forecast – down to £890m from £1.164bn and around the bottom of the range. Gas finished 3¼ lower at 238p.

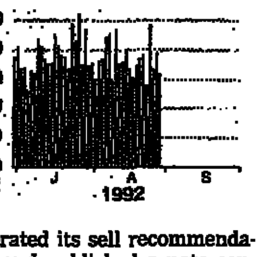
Pharmaceuticals were undermined by dollar weakness over the long weekend. SmithKline Beecham, which announced job cuts and withdrawal from some areas of long-term research, was down 11 at 443p, and Glaxo fell 16 to 706p.

FT–A All–Share Index



Equity Shares Traded

Turnover by volume (million)
Excluding: Intra-market business & Overseas turnover



Conglomerate Tomkins was reported to have been a weak market on vague talk that the company may be looking to make an acquisition in the near future. The shares closed at 205p after a two-for-one share split came into effect.

Business services group BET fell 10 to 104p, making it one of the day's biggest falls in the FT-SE Index. Securities house UBS Phillips & Drew was reported to have downgraded profit expectations.

Publisher Reed International held up well in spite of an announcement that Moody's Investors Service said it might downgrade Reed subsidiary Reed Publishing. The unit's senior unsecured debt is currently rated AA3 and about $725m (£364.3m) of long-term debt is affected. One analyst said the Moody's announcement was surprising because "Reed's interest cover is over six times, gearing is not particularly high and margins are not under pressure". Reed eased 2 to 468p.

Speculation that British Aerospace was about to clinch the long predicted order for Tornado and Hawk aircraft from Saudi Arabia boosted the shares by 7 to 205p.

MARKET REPORTERS:
Peter John,
Joel Kibazo

■ Other market statistics, Page 16

NEW HIGHS AND LOWS FOR 1992

[illegible]

FINANCIAL TIMES STOCK INDICES

	Sept 1	Aug 28	Aug 27	Aug 26	Aug 25	Year Ago	1992 High	1992 Low	Since Compilation High	Since Compilation Low
Government Secs	87.03	87.04	87.29	87.25	87.56	85.96	89.75 (3/7)	85.11 (1/4)	127.40 (9/1/35)	49.18 (3/1/75)
Fixed Interest	102.89	103.19	103.26	103.34	103.82	94.94	106.35 (6/7)	97.15 (2/1)	106.35 (6/7/92)	50.53 (3/1/75)
Ordinary Share●	1670.0	1680.6	1688.6	1676.2	1681.0	2079.3	2149.7 (22/5)	1670.0 (1/9)	2149.7 (22/5/92)	49.4 (26/6/40)
Gold Mines	77.4	79.4	79.3	78.7	80.3	149.5	160.6 (10/1)	77.4 (1/9)	734.7 (15/2/83)	43.5 (26/10/71)
FT-SE 100 Share	2298.4	2312.6	2311.6	2285.0	2281.0	2645.7	2737.8 (11/5)	2281.0 (25/8)	2737.8 (11/5/92)	986.9 (23/7/84)
FT-SE Eurotrack 200	1046.46	1053.68	1056.13	1037.41	1029.56	1189.68	1248.79 (11/5)	1029.56 (25/8)	1248.79 (11/5/92)	938.82 (18/1/91)
●Ord. Div. Yield	5.33	5.29	5.28	5.33	5.31	4.58				
●Earning Yld %(full)	7.74	7.69	7.68	7.74	7.72	7.43				
●P/E Ratio(Net)(☆)	16.33	16.44	16.47	16.33	16.37	16.79				
SEAQ Bargns 5.00pm	15,689	17,194	18,567	17,228	19,218	34,096				
Equity Turnover(£m)†	-	664.7	878.6	828.2	1103.8	777.5				
Equity Bargains†	-	19,253	20,646	20,490	20,803	34,107				
Shares Traded (ml)†	-	318.2	392.4	336.1	488.0	348.8				

Basis 100 Govt. Secs 15/10/26, Fixed Int. 1928, Ordinary 1/7/35, Gold mines 12/9/55. Basis 1000 FT-SE 100 31/12/83 & FT-SE Eurotrack 200 26/10/90. ☆ Nil 15.19.

Ordinary Share Index, Hourly changes Day's High 1680.7 Day's Low 1664.2

Open	9 am	10 am	11 am	12 pm	1 pm	2 pm	3 pm	4 pm
1680.6	1676.8	1673.2	1672.8	1666.1	1664.8	1664.3	1667.9	1669.3

FT-SE 100, Hourly changes Day's High 2313.3 Day's Low 2296.5

Open	9 am	10 am	11 am	12 pm	1 pm	2 pm	3 pm	4 pm
2313.0	2309.2	2305.3	2306.9	2298.8	2298.5	2296.9	2298.8	2298.9

FT-SE Eurotrack 200, Hourly changes Day's High 1051.33 Day's Low 1044.91

Open	10.30 am	11 am	12 pm	1 pm	2 pm	3 pm
1050.64	1049.77	1049.26	1046.96	1046.60	1045.41	1047.04

GILT EDGED ACTIVITY

Indices*	Aug 28	Aug 27
Gilt Edged Bargains	104.7	121.3
5 – Day average	102.1	94.9

*SE Activity 1974.
†Excluding intra-market business and Overseas turnover.

London report and latest Share Index: Tel. 0891 123001. Calls charged at 36p/minute cheap rate, 48p/minute at all other times

TRADING VOLUME IN MAJOR STOCKS

	Volume 000's	Closing Price	Day's change		Volume 000's	Closing Price	Day's change		Volume 000's	Closing Price	Day's change		Volume 000's	Closing Price	Day's change
ADT	31	400	+11	Comm Union	197	449	-1	Lonrho	3,700	68	-3	Shell Transport	2,400	461	-1
ASDA Group	14,000	24½		Cookson	521	123		Lucas	3,100	78	-5	Siebe	169	575	
Abbey National	2,400	263	+2	Courtaulds	772	412	-17	MB Caradon	458	213	-12	Slough Ests	824	101	-3
Albert Fisher	871	32		Dalgety	111	380	+2	MEPC	221	224	-6	Smith (WH) A	812	399	+8
Allied-Lyons	1,300	550	-1	De La Rue	131	541		Manweb	538	349	-8	Smith & Nephew	2,600	129	-2
Amstrad	260	21		Dixons	3,400	187	+3	Marks & Spencer	1,700	298	+3	SmKl Beecham	1,900	443	-11
Anglian Water	334	432	-5	Eastern Elect.	553	271	-5	Midlands Elect	349	320	-9	SmKl Beecham Uts	1,100	395	-15
Argos	35	226	-1	East Midland Elect.	660	302	-7	NFC	396	222	-3	Smiths Inds	438	375	
Argyll Group	1,100	333	+1	Eng China Clays	457	454	-6	NatWest Bank	3,900	301	+7	Southern Elect	535	314	-5
Arjo Wiggins	525	210	-1½	Enterprise Oil	202	345	-3	National Power	2,100	242	+1	South Wales Elect	14	385	-8
Ass. Brit. Foods	194	389	-2½	Eurotunnel Units	871	386	+11	Next	1,200	89½	+1½	South West Water	527	418	-3
Ass. Brit Ports	771	351	-8	FKI	37	66		North West Water	353	471	-6	South West. Elect	878	306	-7
BAA	449	633	+1	Fisons	4,300	173	+5	Northern Elect	27	322	-8	Southern Water	29	401	-5
BAT Inds.	1,500	723	-17	Forte	1,200	125	+1	Northern Foods	2,900	225	-1	Standard Chartd.	255	373	
[illegible]				[illegible]				[illegible]				[illegible]			
British Airways	3,400	224		ICI	670	1063	-2	Rothmans	602	483	-5	Vodafone	2,100	296	-6
British Gas	2,300	238	-3½	Inchcape	527	383	-7	Ryl Bk Scotland	737	144		Warburg (SG)	123	404	-2
British Land	359	142	-5	Kingfisher	2,400	435	+3	Royal Insurance	923	151	+7	Wellcome	1,200	808	-9
British Steel	18,000	49½		Kwik Save	111	641		Saatchi	18	136		Welsh Water	98	448	-8
Bunzl	30	88		Ladbroke	1,200	143	+2	Sainsbury	812	448½	-1½	Wessex Water	357	501	-10
Burmah Castrol	138	547	-3	Land Securities	591	356	-5	Scottish & New	887	382	-1	Whitbread 'A'	655	378	
Burton	2,400	31½	+½	Laporte	605	446	-10	Scot. Hydro-Elect.	1,100	205	-1½	Williams Hldgs	181	229	-2
Cable & Wire.	414	500	-1	Legal & General	831	390		Scottish Power	4,500	186	-1	Willis Corroon	402	156	
Cadbury Schweppes	602	429	-7	Lloyds Abbey	830	300		Sears	1,700	66	-½	Wimpey	388	85	-12
Calor Group	22	174	-1	Lloyds Bank	2,000	402		Sedgwick	1,400	117	-5	Wolseley	277	316	-2
Carlton Comms	222	560	+1	LASMO	618	131	-1	Seeboard	107	310	-8	Yorkshire Elect.	784	368	-8
Coats Viyella	772	159		London Elect.	322	299	-6	Severn Trent Water	1,200	411	-6	Yorkshire Water	559	469	-9

Based on the trading volume for a selection of Alpha securities dealt through the SEAQ system yesterday until 4.30pm. Trades of one million or more are rounded down.

EQUITY FUTURES AND OPTIONS TRADING

ACTIVITY in the derivatives markets was said by dealers to have been the quietest for many months, with many trading houses running on half their normal staffing levels after the long August bank holiday writes Steve Thompson.

The Footsie future opened at 2,311 but saw no business at that level and soon moved up to touch 2,316 before sliding back to the day's low point of 2,293 just after lunch. It rallied to end the session at 2,303. Turnover in the future was a miserable 5,429 lots.

In traded options, total volume reached 15,060 contracts with the FT- SE 100 option attracting 6,424 contracts with one leading agency broker said to have sold 500 September 2,300 puts. One of the independent traders crossed 1,750 June 2,500 calls.

Just before the close of trading, James Capel was said to have carried out two exceptionally large trades in British Aerospace options, with the majority of the business in the November 200 puts and 220 calls.

The final turnover in Aerospace options reached 2,465 contracts, making it the most heavily traded stock option. GEC was also active with a seller of 900 November 240 contracts at 210p.

FT-ACTUARIES SHARE INDICES

	EQUITY GROUPS & SUB-SECTIONS (Figures in parentheses show number of stocks per section)	Tue Sep 1 Index No.	Day's Change %	Est. Earnings Yield% (Max.)	Gross Div. Yield% (Act at (25%))	Est. P/E Ratio (Net)	xd adj. 1992 to date	Fri Aug 28 Index No.	Thu Aug 27 Index No.	Wed Aug 26 Index No.	Year ago (approx) Index No.
1	CAPITAL GOODS (175)	681.32	-0.9	8.67	6.57	14.77	21.54	687.80	690.73	687.24	871.47
2	Building Materials (23)	674.03	-3.0	8.06	8.22	16.82	27.19	695.13	694.33	686.69	1112.26
3	Contracting, Construction (27)	521.02	-4.9	6.72	11.45	32.38	25.52	548.15	549.28	547.70	1163.92
4	Electricals (9)	2043.21	.....	8.09	7.36	15.93	73.60	2042.18	2049.33	2047.11	2489.36
5	Electronics (27)	1921.71	+0.7	8.40	4.49	14.84	46.26	1907.67	1893.66	1876.61	1808.70
6	Engineering-Aerospace (6)	296.67	+0.5	12.28	8.78	10.31	11.27	295.14	295.93	292.82	409.91
7	Engineering-General (43)	414.10	-0.4	9.95	5.83	12.77	12.65	415.58	418.46	418.31	494.69
8	Metals and Metal Forming (7)	263.26	-0.1	6.60	8.37	22.03	7.30	263.57	264.36	259.51	459.30
9	Motors (14)	274.42	-1.8	9.79	8.59	13.45	12.80	279.54	285.30	286.75	364.72
10	Other Industrial Materials (19)	1485.55	-0.8	8.35	5.58	14.40	38.28	1497.55	1512.53	1509.52	1671.80
21	CONSUMER GROUP (191)	1453.86	-0.6	8.34	3.95	14.73	28.02	1463.21	1462.14	1446.37	1584.26
22	Brewers and Distillers (25)	1827.22	+0.1	9.09	4.00	13.26	37.45	1825.24	1834.53	1837.13	1944.67
25	Food Manufacturing (19)	1084.45	-0.9	9.95	4.87	12.43	26.54	1094.53	1101.94	1092.13	1237.25
26	Food Retailing (18)	2605.86	-0.3	9.38	3.50	13.87	47.40	2612.43	2607.77	2596.39	2688.26
27	Health and Household (25)	3692.80	-2.0	7.48	2.88	15.25	42.46	3766.89	3723.87	3648.63	3768.92
29	Hotels and Leisure (18)	952.75	-0.5	8.43	7.19	15.41	38.02	957.73	968.63	956.60	1393.29
30	Media (26)	1391.82	-0.6	7.25	3.78	17.15	29.64	1399.93	1390.43	1380.63	1522.21
31	Packaging, Paper & Printing (17)	704.30	-0.2	7.34	4.69	16.43	16.15	705.90	706.35	698.60	780.84
34	Stores (34)	934.14	+0.5	7.62	4.01	17.47	17.01	929.24	933.18	916.64	1037.21
35	Textiles (9)	555.57	-0.2	8.73	5.58	14.27	15.02	556.41	558.77	554.93	611.56
40	OTHER GROUPS (117)	1166.81	-1.1	10.64	5.82	11.74	37.04	1179.81	1181.23	1174.58	1299.87
41	Business Services (17)	1160.34	-2.5	7.35	4.47	16.61	21.45	1189.83	1201.99	1193.49	1420.13
42	Chemicals (22)	1243.05	-0.9	7.90	5.85	15.71	45.85	1254.81	1257.71	1249.73	1513.23
43	Conglomerates (10)	1089.23	-2.0	10.50	10.10	12.21	37.23	1111.63	1111.44	1096.97	1524.05
44	Transport (14)	2138.63	.....	9.36	5.52	13.14	55.92	2138.51	2152.74	2133.26	2345.28
45	Electricity (16)	1336.04	-0.9	15.18	5.49	8.39	44.58	1348.25	1343.36	1358.88	1231.67
46	Telephone Networks (4)	1364.68	-0.6	11.08	4.84	11.77	46.15	1372.29	1372.20	1358.93	1574.89
47	Water (11)	2870.93	-1.4	15.60	6.03	7.09	86.85	2910.77	2906.93	2963.70	2461.92
48	Miscellaneous (23)	1865.56	-1.8	7.12	5.42	17.62	54.03	1899.58	1904.47	1863.71	1943.83
49	INDUSTRIAL GROUP (483)	1168.49	-0.8	9.15	5.01	13.60	29.75	1178.42	1179.31	1169.75	1319.88
51	Oil & Gas (17)	1813.28	-0.3	7.53	7.03	17.38	69.56	1817.95	1817.41	1785.40	2495.00
59	500 SHARE INDEX (500)	1229.61	-0.8	8.98	5.21	13.91	32.95	1239.31	1240.12	1228.86	1420.60
61	FINANCIAL GROUP (83)	645.75	+0.2	-	6.79	-	26.05	644.62	643.66	637.82	844.25
62	Banks (9)	885.54	+0.8	7.24	6.22	19.91	36.70	878.26	874.11	864.91	986.66
65	Insurance (Life) (6)	1310.93	-0.9	-	6.80	-	45.47	1322.34	1339.35	1331.06	1626.17
66	Insurance (Composite) (7)	431.27	+0.1	-	6.97	-	15.81	430.75	433.29	428.97	675.74
67	Insurance (Brokers) (10)	563.61	-1.3	12.60	9.72	10.41	39.26	571.28	560.33	539.53	1154.60
68	Merchant Banks (7)	395.49	.....	-	5.46	-	12.37	395.41	397.62	398.71	449.34
69	Property (30)	496.83	-1.5	12.15	8.96	10.95	21.34	504.27	499.20	497.74	948.82
70	Other Financial (14)	215.89	-0.1	9.25	8.02	14.19	6.63	216.19	216.59	216.32	264.10
71	Investment Trusts (70)	1036.96	.....	-	4.33	-	24.24	1037.26	1037.71	1028.04	1257.76
99	ALL-SHARE INDEX (653)	1089.89	-0.6	-	5.39	-	30.86	1096.99	1097.40	1087.44	1280.51

	Index No.	Day's Change	Day's High (a)	Day's Low (b)	Aug 28	Aug 27	Aug 26	Aug 25	Aug 24	Year ago
FT-SE 100 SHARE INDEX‡	2298.4	-14.2	2313.3	2296.5	2312.6	2311.6	2285.0	2281.0	2311.1	2669.0

FIXED INTEREST

	PRICE INDICES	Tue Sep 1	Day's change %	Fri Aug 28	Accrued interest	xd adj. 1992 to date
	British Government					
1	Up to 5 years (22)	120.40	+0.05	120.34	2.06	8.49
2	5-15 years (25)	133.72	....	133.87	1.76	9.59
3	Over 15 years (8)	145.28	-0.15	145.50	2.20	8.14
4	Irredeemables (6)	163.82	+0.20	163.85	2.24	8.83
5	All stocks (61)	132.11	....	132.20	1.94	9.22
	Index-Linked					
6	Up to 5 years (2)	169.19	-0.03	169.25	0.15	3.25
7	Over 5 years (10)	144.76	-0.08	144.88	0.72	3.33
8	All stocks (12)	146.96	-0.08	147.08	0.64	3.29
9	Debs & Loans (62)	116.88	+0.17	116.69	2.07	8.26

	AVERAGE GROSS REDEMPTION YIELDS		Tue Sep 1	Fri Aug 28	Year ago (approx.)
	British Government				
1	Low	5 years	9.15	9.14	8.79
2	Coupons	15 years	9.15	9.14	9.54
3	(0%-7¾%)	20 years	9.15	9.14	9.54
4	Medium	5 years	9.88	9.89	9.86
5	Coupons	15 years	9.43	9.42	9.71
6	(8%-10¾%)	20 years	9.32	9.30	9.66
7	High	5 years	10.12	10.13	10.04
8	Coupons	15 years	9.68	9.66	9.82
9	(11%-)	20 years	9.53	9.50	9.73
10	Irredeemables		9.34	9.35	9.75
	Index-Linked				
11	Inflation rate 5%	Up to 5yrs	4.66	4.64	3.89
12	Inflation rate 5%	Over 5 yrs.	4.73	4.72	4.27
13	Inflation rate 10%	Up to 5 yrs.	3.90	3.88	2.94
14	Inflation rate 10%	Over 5 yrs	4.54	4.53	4.08
15	Debs &	5 years	11.10	11.10	11.54
16	Loans	15 years	10.77	10.77	11.33
17		25 years	10.58	10.59	11.15

‡Opening index 2313.0; 9 am 2309.2; 10 am 2305.3; 11 am 2306.9; Noon 2298.8; 1 pm 2298.5; 2 pm 2296.9; 2.30 pm 2298.0; 3 pm 2298.8; 4.10 pm 2299.2; (a) 8.33am (b) 1.38pm † Flat yield. Highs and lows record, base dates, values and constituent changes are published in Saturday issues. A list of constituents is available from the Publishers, The Financial Times, Number One, Southwark Bridge, London SE1 9HL. The FT-ACTUARIES SHARE INDICES SERIES covers a range of electronic and paper-based products relating to these indices. These are available by subscription from FINSTAT, 3rd Floor, Number One, Southwark Bridge, London SE1 9HL. CONSTITUENT CHANGES: DELETIONS: Shandwick (30), [illegible] Discount Co (70). ADDITION: British Bio-Technology Group (27).

LONDON SHARE SERVICE

BRITISH FUNDS

	Notes	Price £	+ or -	1992 high	1992 low	Yield Int.	Yield Red.
"Shorts" (Lives up to Five Years)							
13½pc 1992		100⅛xd	—	102⅛	100₃⁄₃₂	13.48	
Treas 8¼pc 1993		99⅛	—	99⅛	97½	8.32	[illegible]
10pc 1993‡‡		99¾	—	100½	99¼	10.03	[illegible]
12½pc 1993‡‡		101¾	—	103¾	101¾	12.29	[illegible]
Funding 6pc 1993‡‡		96¾xd	—	97¾	95¾	6.18	[illegible]
Treas 13¾pc 1993‡‡		103¾	—	106¾	103¾	13.23	[illegible]
[illegible]							

BRITISH FUNDS - Cont.

	Notes	Price £	+ or -	1992 high	1992 low	Yield Int.	Yield Red.
Treas 10½pc 1999		103	-½	107½	101½	10.19	9.86
[illegible]							

BRITISH FUNDS - Cont.

Index - Linked	Notes	Price £	+ or -	1992 high	1992 low	Yield Int. (1)	Yield Red. (2)
[illegible] 2pc '94	(102.9)	125⅞	-⅛	127⅝	122⅞	3.08	4.60
[illegible] '96	(67.9)	178⅞xd	-⅛	184¼	176⅜	4.04	4.70
[illegible] pc '01	(78.3)	141⅜xd	-⅛	149⅜	141⅜	4.63	4.97
[illegible] pc '03	(78.8)	137	-⅛	144⅜	137	4.66	4.94
[illegible] '06	(69.5)	138⅜	-⅛	147⅛	138⅜	4.64	4.86
[illegible] pc '09	(78.8)	125⅞	-⅛	134⅛	125⅛	4.61	4.81
[illegible] pc '11	(74.6)	130⅛	-⅛	138⅜	129¾	4.58	4.75
[illegible] pc '13	(89.2)	107⅛	-⅛	114⅛	106⅛	4.54	4.71
[illegible] pc '16	(81.6)	114⅛	-⅛	121⅞	112⅞	4.49	4.65
[illegible] pc '20	(83.0)	109⅝	-⅛	117⅛	107⅜	4.46	4.60
[illegible] pc '24‡‡	(97.7)	90¾	-⅛	97⅛	88⅞	4.42	4.55
[illegible] pc '30‡‡	(135.1)	92⅜	-⅛	99¾	92⅜	4.39	4.53

[illegible]pective real redemption rate on projected inflation of (1) [illegible] and (2) 5%. (b) Figures in parentheses show RPI base for [illegible]xing, (ie 8 months prior to issue) and have been adjusted to [illegible]ct rebasing of RPI to 100 in January 1987. Conversion factor [illegible]5. RPI for January 1992: 135.6 and for July 1992: 138.8.

OTHER FIXED INTEREST

	Notes	Price £	+ or -	1992 high	1992 low	Yield Int.	Yield Red.
[illegible]an Dev 11⅛ 2010		110⅜	-⅛	115⅜	105⅞	10.10	9.87
[illegible]n Dev 10¼pc 2009		104⅛	-⅛	109½	100⅛	9.82	9.71
[illegible]o 11½pc 2012		108¼	-⅛	113½	102⅛	10.62	10.51
[illegible]d Cap 8½pc '10		90	—	90¾	88⅞	9.44	-
[illegible] Cap 1998		92⅞	-¼	99¾	90	8.70	-
[illegible]c '97-02		105⅞	-⅛	115½	103⅞	12.28	-
[illegible]o Quebec 15pc 2011		135⅝	-⅛	141⅜	130⅞	11.08	10.58
[illegible]s 13½pc 2006		121¾	-¼	125	116¼	11.13	10.56
[illegible]pool 3½pc Irred		31½	-¼	34	30	11.11	-
[illegible]3pc '20 Aft		29½	-¼	31	27	10.17	-
[illegible]hester 11½pc 2007		107¼	-¼	111⅛	103¼	10.72	10.53
[illegible] Wtr. 3pc 'B'		59¼	-¼	61	53	5.05	9.11
[illegible]e Anglia 3⅞pc 2021		104¼	-¼	111⅛	103¼	-	5.68
[illegible]pc IL 2024		104¾	-¼	110¼	103¼	-	5.40
[illegible] States 16½pc 2008		123¼xd	-¼	126	121½	13.29	13.03

LEGAL NOTICES

[illegible]

PIONEER ELECTRONIC CORPORATION

Notice is hereby given to holders of CDR's issued by Caribbean Depositary Co., N.V. evidencing shares in the above company that the "First quarter report 1993" of Pioneer Electronic Corporation ended June 30, 1992 may be obtained from:

N.V. Nederlandsch Administratie- en Trustkantoor,
Herengracht 420
1017 BZ Amsterdam

and

The Bank of Tokyo Ltd. established in Tokyo, Brussels, London, Düsseldorf, Paris and New York.

Pierson, Heldring & Pierson N.V.

Amsterdam, August 27, 1992

LONDON SHARE SERVICE

AMERICANS

	Notes	Price £	+ or -	1992 high	low	Mkt Cap£m	Yld Gr's
Abbott Labs	b	15½xd	-⅛	19⅛	14⅝	13,158	2.0
♥Allegheny & W		306p	+16	336p	226p	158.0	5.1
Amdahl		581p	-7	1158p	642p	763.8	0.8
Amer Cyanamid		29⅝	-⅜	37	26⅝	2,708	2.9
Amer Express		10½xd	-⅛	13⅞	10	4,987	5.0
Amer T & T		21xd		24⅞	20⅝	28,177	3.3
Ameritech		34¼	-⅜	36	32½	14,995	5.4
BankAmerica		21xd		27⅛	19	7,516	3.1
Bankers NY		30xd		37⅛	28⅞	2,522	4.4
Bell Atlantic		24¼	-⅜	26¼	23⅛	18,499	5.6
BellSouth		26⅝	-½	29⅛	25	13,018	5.4
♥Bethlehem Steel		5xd		9⅝	5¼	526.3	-
Bowater		697pxd	-16	1579p	905p	337.8	6.7
CPC	h	24¼xd		26¾	22¼	3,748	2.5
♥Cadiz Land Inc		128p	----	342p	128p	-	-
Campbell Soup		18½xd		23	17⅜	4,643	2.2
Chase Manhattan		11xd		16½	9⅝	1,825	5.4
Chrysler		9xd		11½	6⅛	2,786	3.3
Citicorp		8⅞xd	----	11¼	5⅞	3,625	-
Colgate-Palm		28xd	+⅜	29	25¼	4,498	2.3
Cont'l Bank		858p	-8	1030p	499p	685.0	3.7
Dana		18⅝xd	-⅜	24½	14	842.5	4.6
Data General		367p	-10	1084p	384p	166.8	-
Dun & Brad		27		33½	27⅝	4,984	4.3
Eaton		35½	-1⅛	46½	32½	1,254	3.2
[illegible]							

CANADIANS

[illegible]

BANKS

[illegible]

BREWERS & DISTILLERS

[illegible]

BUILDING MATERIALS

[illegible]

BUILDING MATERIALS - Cont.

[illegible]

BUSINESS SERVICES

[illegible]

CHEMICALS

[illegible]

CONGLOMERATES

[illegible]

CONTRACTING & CONSTRUCTION

[illegible]

CONTRACTING & CONSTRUCTION - Cont.

[illegible]

ELECTRICALS

[illegible]

ELECTRICITY

[illegible]

ELECTRONICS

[illegible]

ENGINEERING - AEROSPACE

[illegible]

ENGINEERING - GENERAL

[illegible]

ENGINEERING - GENERAL - Cont.

[illegible]

FOOD MANUFACTURING

[illegible]

FOOD RETAILING

[illegible]

HEALTH & HOUSEHOLD

[illegible]

HOTELS & LEISURE

[illegible]

HOTELS & LEISURE - Cont.

[illegible]

INSURANCE BROKERS

[illegible]

INSURANCE COMPOSITE

[illegible]

INSURANCE LIFE

[illegible]

INVESTMENT TRUSTS

[illegible]

INVESTMENT TRUSTS - Cont.

[illegible]

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LONDON SHARE SERVICE

INVESTMENT TRUSTS - Cont.

Notes	Price	+ or -	1992 high	low	Yld Gr's	NAV	Dis or Pm(-)
Scottish Inv ....†	148	—	178	147	4.8	179.7	17.6
Warrants	22	—	38	22	–	–	–
Scot Mortgage	138	—	157	135	3.8	162.5	15.1
Scot National Inc	78xd	—	107	87½	16.9	–	–
Cap	17	—	42	12½	–	–	–
Stepped Pf	138¼	—	142	126	5.8	–	–
Zero Div Pf	186	-½	187½	168½	–	–	–
Warrants	3½	—	9	3	–	–	–
Scott Value ....‡a	58½	—	64	48	4.1	55.6	-5.2
Sec Alliance ....†	1081	—	1283	1066	4.3	1220.7	11.5
Second Market ....§	227	—	244	222	8.9	274.8	17.6
Sec Tst Scot	62	-½	70½	61½	7.0	63.7	2.6
Select Assets	79	—	102½	78½	1.6	120.1	34.2
Eq Ind Serl	107	—	129	107	5.2	–	–
Eq Ind Serll	107	—	122	107	5.3	–	–
Shires	189	-1	249	185	12.5	194.7	-2.2
11pc Cv Ln '03/04	£96½xd	—	£119½	£95½	11.4	–	–
Sum Select	89xd	—	91	88	0.5	88.4	23.1
Warrants	10	—	21	10	–	–	–
Smaller Cos	68	—	85	57	4.8	79.0	14.8
Warrants	11	—	20	10	–	–	–
Somerset Tst	122	—	148	55	–	78.7	-55.1
Sphere Inc ....N	10	—	20	9¼	41.3	10.5	9.2
Zero Div Pf	66¼	+½	77¼	65¼	–	–	–
SumR	38	-1	55	30	6.6	91.6	66.7
TR City of Lon	102½	—	127½	97½	6.2	100.1	-2.4
TR Euro Growth	72	—	89	72	2.8	90.8	20.3
Ptg Sub	36	—	54	35	6.3	–	–
TR Far East Inc M	64xd	—	88	76	7.8	69.2	6.4
Warrants	14	-1	22	12	–	–	–
TR High Inc	94	—	110	91	8.5	93.6	0.5
Sub ....g	22½	—	35	21	8.9	–	–
TR Pacific ....s	78	—	89	70	6.5	83.2	12.8
TR Prop	15	—	27	14¼	12.8	27.0	44.3
TR Smaller	104½	—	182	103	4.7	123.2	15.2
TR Technology	19½	—	37	18	12.6	47.7	60.2

INVESTMENT COMPANIES

MEDIA

MERCHANT BANKS

Notes	Price	+ or -	1992 high	low	Mkt Cap £m	Yld Gr's
Ansbacher (H)	28	+2	34	26	52.5	–
Savage 8pc Cm 2nd Pf	94	—	100	83½	11.8	11.3
9¼pc Non-Cum Pf	118¼	-½	126	109¼	49.3	11.2
Brown Shipley	63	—	204	50	8.45	–
Close Bros ....†	218	—	287	210	80.7	5.6
Hambros	208	—	292	207	359.8	8.8
7½pc Cv Pf	103½	—	119	93	155.3	10.0
Joseph (L)	318	—	333	308	18.3	6.8
Kleinwort Benson	238	—	324	212	298.8	9.3
Rea Bros	25½xd	—	37	25	10.8	2.6
Schroders	1188	—	1365	1043	686.7	2.1
N/V	970	—	1108	883	127.3	2.5
Singer & Fried	34½	+½	58	34	65.4	9.7
Warburg (SG)	484	-2	686	403	841.1	5.9
6pc Cv Pf	138xd	—	204	138	68.7	5.8
Wintrust	213xd	—	263	213	18.1	5.8

METALS & METAL FORMING

Notes	Price	+ or -	1992 high	low	Mkt Cap £m	Yld Gr's
ASW	68	-1	165	60	48.8	20.0
Apollo Metals	105	-2	147	105	12.4	4.4
Ash & Lacy	138	—	188	138	36.6	6.2
Barrett (H) ....‡	12	—	45	12	5.21	‡
Billam (J)	110	—	144	84	1.78	5.2
Brit Steel	49½	—	86	48	990.8	12.1
BCI	21	—	35	15	18.2	13.0
Castings	161	—	196	118	34.4	3.4
Chamber & Hill	105	—	148	90	7.87	7.8
Cohen (A)	325	—	480	325	8.83	4.1
Cook (Wm)	186xd	—	335	156	33.9	8.5
Cooper (F)	28	—	68	27	9.96	19.0
Downiebrae	27	—	38	27	4.72	2.5
Firth (GM) ....‡	18½	—	35	9	2.54	‡

MISCELLANEOUS

MOTORS

OIL & GAS

OIL & GAS - Cont.

OTHER FINANCIAL

OTHER INDUSTRIAL MATERIALS

PACKAGING, PAPER & PRINTING

PACKAGING, PAPER & PRINTING - Cont.

PROPERTY

STORES

STORES - Cont.

TELEPHONE NETWORKS

TEXTILES

TRANSPORT

WATER

SOUTH AFRICANS

PLANTATIONS

MINES

MINES - Cont.

Notes	Price	+ or -	1992 high	low	Mkt Cap £m	Yld Gr's
‡‡Ivernia West IE	33	—	58	32	16.6	–
‡‡Kells Mins IE	18	—	42	14	6.43	–
‡Kenmare	2¼	+½	6½	2¼	2.84	–
Meinga Res	15	-1	48	15	1.65	–
‡‡Navan Res IE	23½	—	28	16	3.15	–
North West Expl AS	3	—	6	2	1.81	–
Oryx Gold $	54	—	103	51	–	–
Plateau	3#	—	13	3	1.37	–
RTZ	508	—	668	469	5,010	5.2
‡Vizcaya	1¼	—	3	1	0.94	–
ψWestern & Pac C$	14	—	66	7	7.68	–
‡Young Grp ....‡	14	—	110	4	2.11	‡

GUIDE TO LONDON SHARE SERVICE

Company classifications are based on those used for the FT-Actuaries Indices and FT Actuaries World Indices.

Closing mid-prices are shown in pence unless otherwise stated. Highs and lows are based on intra-day mid- prices.

Where stocks are denominated in currencies other than sterling, this is indicated after the name.

Symbols referring to dividend status appear in the notes column daily as a guide to yields and P/E ratios. Dividends and Dividend covers are published on Monday.

Market capitalisation shown is calculated separately for each line of stock quoted.

Estimated price/earnings ratios are based on latest annual reports and accounts and, where possible, are updated on interim figures. P/Es are calculated on "net" distribution basis, earnings per share being computed on profit after taxation, excluding exceptional profits/losses and unrelieved ACT where applicable. Yields are based on mid-prices, are gross, adjusted to ACT of 25 per cent and allow for value of declared distribution and rights.

Estimated Net Asset Values (NAVs) are shown for Investment Trusts, in pence per share, along with the percentage discounts (Dis) or premiums (Pm -) to the current pre-closing share price. The NAV basis assumes prior charges at par value, convertibles converted and warrants exercised if dilution occurs.

- ■ Indicates the most actively traded stocks. This includes UK stocks where transactions and prices are published continuously through the Stock Exchange Automated Quotation system (SEAQ).
- ● "Tap Stock"
- * Highs and lows marked thus have been adjusted to allow for rights issues for cash
- † Interim since increased or resumed
- ‡ Interim since reduced, passed or deferred
- ‡‡ Tax-free to non-residents on application
- ● Figures or report awaited
- ψ Not officially UK listed; dealings permitted under rule 535(4)(a)
- ⁂ USM; not listed on Stock Exchange and company not subjected to same degree of regulation as listed securities.
- ‡‡ Not officially UK listed; dealings permitted under Rule 535(2)
- # Price at time of suspension
- ¶ Indicated dividend yield after pending scrip and/or rights issue
- ◆ Merger bid or reorganisation in progress
- § Forecast dividend yield, p/e based on earnings updated by latest interim statement.
- ◆ Unregulated collective investment scheme.

a Yield based on annualised dividend. b Figures based on prospectus or other official estimates. c Cents. f Flat yield. g Assumed dividend yield after rights issue. h Assumed dividend yield after scrip issue. n Rights issue pending. q Earnings based on preliminary figures. s Dividend yield excludes a special payment. t Indicated dividend yield, p/e ratio based on latest annual earnings. u Forecast, or estimated annualised dividend yield, p/e based on previous year's earnings. v Subject to local tax. z Dividend yield includes a special payment. E Auction basis. F Yield based on prospectus or other official estimates for 1990-91. G Assumed yield after pending scrip and/or rights issue. H Yield based on prospectus or other official estimates for 1991. K Yield based on prospectus or other official estimates for 1992-93. L Estimated annualised yield, p/e based on latest annual earnings. M Yield based on prospectus or other official estimates for 1991-92. N Yield based on prospectus or other official estimates for 1992. P Figures based on prospectus or other official estimates for 1991. R Forecast annualised yield, p/e based on prospectus or other official estimates. T Figures assumed. W Pro forma figures. Z Dividend yield to date.

Abbreviations: xd ex dividend; xc ex scrip issue; xr ex rights; xa ex all; xl ex capital distribution.

This service is available to companies whose shares are regularly traded in the United Kingdom for a fee of £1200 a year for each security shown, subject to the Editor's discretion

FT MANAGED FUNDS SERVICE

● Current Unit Trust prices are available from FT Cityline. For further details call (071) 925 2128.

AUTHORISED UNIT TRUSTS

AIB Unit Trust Managers Limited (1000)F
51 Belmont Rd, Uxbridge, Middx UB8 1RZ 0895 259783

	Init Chrge	Canc. Price	Bid Price	Offer Price	+ or -	Yield Gr's
AIB Grofund American	5	107 4	108 5	114 2	-0 78	0 00
AIB Grofund Equity	5	161 2	163 3	172 8	.	2.84
AIB Grofund Euro ♦	5	122.6	124.4xd	130 9	+0 30	1 06
AIB Grofund Gilt	3	68 34	68 38xd	70 49	+0.01	6.51
AIB Grofund Japan	5	100 1	101.3	106 6	-1.50	0 00

AXA Equity & Law Unit Tst Mngrs (1200)F
Equity & Law Hse, Corporation St, Coventry 0203 553231

	Init Chrge	Canc. Price	Bid Price	Offer Price	+ or -	Yield Gr's
General Inc	5	323 1	325 7	346.5	-1 4	3 76
General Acc	5	344 7	347.5	369 7	-1 5	3 76
UK Growth Acc	6	235 5	239 8	255 2	-1.0	4.23
UK Growth Inc	6	171.6	174 8	186 0	-0 7	4 23
Higher Inc Acc	6	396 6	404 6	430 5	-2.9	6 01
Higher Inc Inc	6	250 2	255.3	271.6	-1.8	6.01
Gilt/Fxd Int Acc	5¼	149 6	150 2	158.2	+0.3	8 50
Gilts/Fxd Int Inc	5¼	80 56	80 94	85 20	-2.89	8 50
Nth America	6	164 8	168 6	179 4	-0 6	0 00
Far East	6	178 4	181 0	192 6	-3 8	0 58
Europe	6	177 2	180 0	191 5	-2 0	0 61
Brit Excell	6	47 23	47 23	50.25	-1.71	4 45
Brit Fndmtls Acc	6	62 24	62 24	66 22	-1 4	7 04
Brit Fndmtls Inc	6	50 64	50 64	53 88	-1.14	7.04
Global Opps	6	46 44	47.14	50 15	-0.64	0.94

Abbey Unit Tst Mngrs (1000)H
80 Holdenhurst Rd, Bournemouth 0345 717373

	Init Chrge	Canc. Price	Bid Price	Offer Price	+ or -	Yield Gr's
High Income						
Gilts & Fixed Int	6	116 4	116.4xd	123 4	-1 9	8.39
High Inc Equity	6	109 1	111 8	118.9	-0.7	7.19
Worldwide Bond	6	210 9	210 9xd	223.5	-0 3	6.37
Capital Growth						

[illegible]

Mercury Fund Managers Ltd (1000)H
33 King William St, EC4R 9AS 071-280 2060

	Init Chrge	Canc. Price	Bid Price	Offer Price	+ or -	Yield Gr's
American	5	118.3	118.3	126 1	-0 60	0 00
(Accum Units)	5	126.5	126.5	134.7	-0 78	0 00
American Opps	5	46.92	47.54	50.71	-0 22	0 00
(Accum Units)	5	47 97	48.19	51.41	-0 22	0.00
British Blue Chip	5	57 28	57 35	61 18	-0 14	4 36
(Accum Units)	5	65 52	65 61	69 99	-0.15	4.36
Cash *	0	100.9	100.9	100.9	+0.10	9.77
(Accum Units) *	0	124.4	124.4	124.4	+0.10	9.77
European Growth	5	147.2	147.2xd	156.8	+0 40	0.57
(Accum Units)	5	157.8	157 8xd	166.9	+0.40	0 57
European Income	5	58.06	58.06	61 47	-0 11	3.82
(Accum Units)	5	72.67	72.67	76.94	-0.14	3 82
General	5	344.8	346 5xd	369.7	-1.70	3 46
(Accum Units)	5	646 4	649.8	657.2	-2.70	3 46

[illegible]

Guide to pricing of Authorised Unit Trusts

Compiled with the assistance of Lautro §§

INITIAL CHARGE: Charge made on sale of units. Used to defray marketing and administrative costs, including commission paid to intermediaries. This charge is included in the price of units.

OFFER PRICE: Also called issue price. The price at which units are bought by investors.

BID PRICE: Also called redemption price. The price at which units are sold back by investors.

CANCELLATION PRICE: The minimum redemption price. The maximum spread between the offer and bid prices is determined by a formula laid down by the government. In practice, most unit trust managers quote a much narrower spread. As a result, the bid price is often set above the cancellation price. However, the bid price might be moved to the cancellation price by the managers at any time, usually in circumstances in which there is a large excess of sellers of units over buyers.

TIME: The time shown alongside the fund manager's name is the time of the unit trust's valuation point unless another time is indicated by the symbol alongside the individual unit trust name. The symbols are as follows: (♥) - 0001 to 1100 hours; (♣) - 1101 to 1400 hours; (♦) - 1401 to 1700 hours; (♠) - 1701 to midnight. Daily dealing prices are set on the basis of the valuation point; a short period of time may elapse before prices become available.

HISTORIC PRICING: The letter H denotes that the managers will normally deal on the price set on the most recent valuation. The prices shown are the latest available before publication and may not be the current dealing levels because of an intervening portfolio revaluation or a switch to a forward pricing basis. The managers must deal at a forward price on request, and may move to forward pricing at any time.

FORWARD PRICING: The letter F denotes that the managers deal at the price to be set on the next valuation. Investors can be given no definite price in advance of the purchase or sale being carried out. The prices appearing in the newspaper are the most recent provided by the managers.

SCHEME PARTICULARS AND REPORTS: The most recent report and scheme particulars can be obtained free of charge from fund managers.

Other explanatory notes are contained in the last column of the FT Managed Funds Service.

§§ Life Assurance and Unit Trust Regulatory Organisation, Centre Point, 103 New Oxford Street, London WC1A 1QH. Tel: 071-379-0444.

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FT MANAGED FUNDS SERVICE

• Current Unit Trust prices are available from FT Cityline. For further details call (071) 925 2128.

Sovereign Unit Tst Mngrs Ltd (1000)F
12 Christchurch Rd, Bournemouth 0202 298422

	Init Chrge	Canc. Price	Bid Price	Offer Price	+ or -	Yield Grs
Cash	1	50.75	50.75	51.25	+0.05	10.00
Cnsrtd Prfmnce	5½	46.98	47.32	50.47	-0.02	9.5
Ethical	5½	39.52	40.51	43.09	-0.07	6.0
European Growth	5½	45.22	45.42	48.44	+0.46	9.5
Income	5½	39.72	40.21	42.89	-0.35	8.6
Intl Growth	5½	59.00	59.39	63.34	+0.81	3.0
Managed	5½	51.03	51.69	55.13	+0.01	4.7
UK Growth	5½	41.08	41.75	44.53	-0.03	6.8

Standard Chartered Equitor (1200)F
69 Old Broad Street, EC2M 1QS 071-280 6521

	Init Chrge	Canc. Price	Bid Price	Offer Price	+ or -	Yield Grs
Mngd Exempt Acc	3	174.1	176.0	183.3	-0.4	3.45
Do Income	3	161.7	163.4	170.2	-0.4	3.45

Standard Life Tst Mngmt Ltd (0730)H
3 George St, Edinburgh EH2 2XZ 0800 393777

	Init Chrge	Canc. Price	Bid Price	Offer Price	+ or -	Yield Grs
Managed Acc	5½	32.74	32.74	34.79	+0.1	2.57
UK Equity Gth Acc	5½	43.83	44.71	47.51	-0.1	2.19
UK Eq High Inc Inc	5½	25.44	26.05	27.68	-0.1	5.96
UK Eq High Inc Acc	5½	29.15	29.84	31.71	-0.1	5.96
UK Equity Gen Acc	5½	42.71	43.44	46.16	...	3.57
UK Equity Gen Inc	5½	33.05	33.62	35.73	...	3.57
UK Larger Co Acc F	7½	282.6	286.4	310.8	-0.8	4.93
UK Larger Co Inc F	7½	224.0	227.0	246.4	-0.7	4.93
Gilt & Fxd Int Inc	5½	28.00	28.07	29.69	-0.1	7.76
O'seas Lrg Co Acc F	7½	183.4	186.5	202.4	+5.1	1.92
Nth American Acc	5½	30.57	30.72	32.64	...	1.01
Far East Acc	5½	34.23	35.10	37.30	+1.8	0.20
European Acc	5½	31.55	32.77	34.82	+0.2	1.65

Stewart Ivory Unit Tst Mngrs Ltd (1200)H
45 Charlotte Sq, Edinburgh 031-226 3271

	Init Chrge	Canc. Price	Bid Price	Offer Price	+ or -	Yield Grs
American ψ	5	241.6	241.6	257.2	-1.1	0.93
(Accum Units) ψ	5	284.4	284.4	302.7	-2.3	0.93
British	5	704.8	721.9	763.8	-4.2	7.05
(Accum Units)	5	1215.8	1245.3	1317.6	-3.9	7.05
European	5	319.6	319.6	340.4	-0.8	1.42
(Accum Units)	5	346.4	346.4	369.0	-0.9	1.42
Japan	5	87.94	87.94	93.07	-0.38	-
(Accum Units)	5	88.24	88.34	93.61	-0.39	-

Robert Fleming Asset Mngmt Ltd

	Bid Price	Offer Price	+ or -	Yield Gross
Am Exempt	£428.72	437.19	-	1.35
Gen Exempt	£119.50	116.00	...	4.35
Jap Exempt	£327.36	333.87	...	1.31
Pacific Exempt	£97.14	99.346	...	2.12
Cont Euro Exempt	£93.10	94.86	...	2.69
Ireland Exempt Aug 27	£114.23	117.08	-3.87	5.13
Amer Indxd Expt Aug 27	£95.81	96.775	-3.98	2.95
Japan Indxd Expt Aug 27	£42.65	43.51	+4.95	1.06
Euro Indxd Expt Aug 27	£86.09	87.82	-2.86	3.52
O'seas Indxd Expt Aug 27	£83.41	85.21	+0.25	2.49

Foreign & Colonial Unit Management Ltd

	Bid Price	Offer Price	+ or -	Yield Gross
Balanced Acc Aug 25	138.0	143.8	...	4.51
Balanced Inc Aug 25	138.0	143.8	...	4.51

Funds in Court*

	Bid Price	Offer Price	+ or -	Yield Gross
Capital Aug 27	446.08	449.45	...	3.90
Gross Aug 27	163.91	165.23	...	12.71
High Yield Aug 27	259.44	261.51	...	9.43

* Restricted to monies under Court control

Henderson Unit Trust Management Ltd

	Bid Price	Offer Price	+ or -	Yield Gross
Pensions Mngd	48.31	49.32	-0.34	3.94

INVESCO MIM Management Ltd
Exempt Funds

	Bid Price	Offer Price	+ or -	Yield Gross
Intl Mngd P'Follo	1016.0	1098.0	...	-
Mngd Pens (Acc)	62.5	66.6	...	-

Lazard Brothers & Co. Ltd

	Bid Price	Offer Price	+ or -	Yield Gross
Property Aug 12	£2225.0	2350.0	...	7.00
Inc Gth Prp Apr 22	£1375.0	1500.0	-	8.90

Lazard Investors Ltd ‡‡
Exempt Funds

	Bid Price	Offer Price	+ or -	Yield Gross
Small Co's Aug 28	£3589.5	3753.6	...	3.93
European Aug 28	£347.6	359.1	...	2.06
American Aug 28	£309.6	312.2	...	1.92
Japan Aug 28	£375.8	381.4	...	1.71
Pacific Aug 28	£125.6	128.5	...	1.35

INSURANCES

OTHER UK UNIT TRUSTS

Continued on next page

FT MANAGED FUNDS SERVICE

● Current Unit Trust prices are available from FT Cityline. For further details call (071) 925 2128

OFFSHORE INSURANCES

MANAGEMENT SERVICES

OFFSHORE AND OVERSEAS

BERMUDA (SIB RECOGNISED)

CANADA (SIB RECOGNISED)

GUERNSEY (SIB RECOGNISED)

GUERNSEY (REGULATED)

IRELAND (SIB RECOGNISED)

IRELAND (REGULATED)

ISLE OF MAN (SIB RECOGNISED)

هكذا من الأصل

هكذا من الأصل

FT MANAGED FUNDS SERVICE

● Current Unit Trust prices are available from FT Cityline. For further details call (071) 925 2128.

	Init Chrge	Canc. Price	Bid Price	Offer Price	+ or -	Yield Gr's
Gartmore Fund Managers (IoM)						
PO Box 32, Douglas, IoM 0624 627610						
Intl Grth	5¼	445.5	445.5	478.3	-0.61	0.9
Leopold Joseph Fund Mngrs (IoM) Ltd						
PO Box 52 Athol St Douglas IoM 0624 661020						
L.J. International	5¼	83.11	83.11	89.33	+0.03	-
Mercury Fund Managers IoM Ltd						
11 Hill Street, Douglas IoM 0624 662255						
Merc IoM Fund	5	94.33	94.33	100.7	-0.30	6.6
Merc Intl Bond	3	50.05	50.05	52.63	-0.09	8.3
Sun Life Management (IoM) Ltd						
PO Box 178, Douglas, IoM 0624 622444						
Unibank Scandinavian Fund Ltd						
19-21 Circular Rd, Douglas, IoM 0624 629420						
Scandinavia Fd	5	-	118.00	125.72	+2.95	1.0

ISLE OF MAN (REGULATED)(**)

	Bid Price	Offer Price	+ or -	Yield Gross
ATC Fund Management (SG) Ltd				
SG International	$10.72			-
AXA Equity & Law Intl Fund Mgt Ltd				
European Equity	144.76	152.35	+1.68	-
Far Eastern Equity	$2.3840	2.4039	+0.0092	-
North Amer Equity	$1.6628	1.7500	+0.0131	-
UK Equity	145.88	153.53	-0.51	-
Global Equity	102.33	107.70	+1.27	-
UK Gilt & Fxd Int	98.26	103.41	-0.33	-
Dollar Deposit	$0.9804			-
Sterling Deposit	£200.81		+0.02	-
Managed Currency	89.89	94.60	+0.56	-

	Init Chrge	Canc. Price	Bid Price	Offer Price	+ or -	Yield Gr's
Equitilink International Mngt Ltd						
First Aust Prime Inc Inv Co Ltd NAV Aug 27 C$12.2						
First Aust Prime Inc Inv Co Ltd NAV Aug 27 US$10.27						
NAV Diluted to reflect exercise of all Wrrts C$12.10 US$10.13						
Fidelity Investment (CI) Ltd						
Sterling Americas			£2.470	2.600	-0.002	-
Fleming Group						
Robert Fleming Management (Jersey) Ltd						
Deutschland Inv Co NAV			DM16.53			-
Foreign & Colonial Mngt (Jersey) Ltd						
Hypo Foreign & Colonial Reserve Asset Fd Ltd						
US$ Cash			$10.82			-
Sterling Cash			£12.21		+0.02	-
US$ Bonds			$15.40		-0.01	-
Multicurrency Bonds			$21.72			-
Sterling Bonds			£13.15			-
D Mark Bonds			DM10.68			-
Ecu Bonds			Ecu11.19		-0.03	-
UK Equities			£9.46		-0.02	-
US Equities			$16.50		-0.06	-
Japanese Equities			Y611		+0.27	-
Contl Euro Equities			DM14.94		-0.03	-
UK Negative Equities			£14.14		+0.04	-
US Negative Eq			$10.06		+0.04	-
Japanese Negative Eq			Y830		-0.24	-
Contl Eur Negative Eq			DM-			-
UK Geared Equities			£-			-
US Geared Equities			$-			-
Japanese Geared Eq			Y1068		+0.68	-
Contl Euro Geared Eq			DM-			-
Gold			$9.63		+4	-
John Govett Management (Jersey) Ltd						

	Init Chrge	Canc. Price	Bid Price	Offer Price	+ or -	Yield Gr's
Commercial Union Luxembourg SA - Contd.						
Reserve Funds						
Dollar Reserve Acc		$-	10.5310	10.6382		1.9
Dollar Reserve Dis		$-	9.9366	10.0378		1.9
Yen Reserve Acc		Y-	1031	1041		2.5
Yen Reserve Dis		Y-	996	1006		2.5
D'mark Reserve Acc		DM-	11.0612	11.1729		7.9
D'mark Reserve Dis		DM-	10.0292	10.1305		7.9
Stlg Reserve Acc		£-	1.2888	1.3018		9.2
Stlg Reserve Dis		£-	1.0051	1.0153		9.2
Bond Funds						
Peseta Bond Acc		Pta-	242	244		
Peseta Bond Dis		Pta-	190	192		
Asset Management Fund						
Equity Funds						
Alpha UK				£1.30		-
Alpha US				$1.68		-
Alpha Worldwide				SFr6.15		-
Alpha Japanese				Y663		-
Alpha Pacific Rim	$0.00			1.71		-
Alpha European				Ecu1.02		-
Gold Share	$0			0.83	+0.01	-
Bond Funds						
Sterling Bond				£137.00		8.9
US $ Bond				$136.34		4.0
Deutschemark Bond				DM56.04		5.8
Alpha Worldwide				SFr57.40	-0.63	6.7
Reserve Funds						
Sterling Reserve				£15.169		9.2
US $ Reserve				$12.138		2.5
Deutschemark Reserve				DM12.635		8.1
Cravale Asset Advisors (Lux) SA (u)						
11 Rue Aldringen, L-1118 Luxembourg 071-357 6400						
Equity Wrnt (Europe) Ltd		$-		2.46	-0.01	-
Equity Wrnt (Japan) Ltd		$-		1.56	-0.01	-
Hedge Fund		$-		20.00	-2.72	-
DB Investment Management SA						
2 Boulevard Konrad Adenauer, Lux 010 352 421011						

	Init Chrge	Canc. Price	Bid Price	Offer Price	+ or -	Yield Gr's
Midland Internatnl Circuit Fund SICAV(u)						
Midland Bank Fund Managers (Jersey) Ltd						
PO Box 26 St Helier, Jersey 0534 606000						
UK Growth		£-	0.860	0.913		1.64
European Growth		£-	0.840	0.891		-
European Opps		$-	2.362	2.505		-
Japan Growth		£-	0.586	0.622		-
Japanese Opps		$-	1.673	1.774		-
Pacific Growth		£-	0.829	0.880		0.46
Nth American Growth		£-	0.941	0.998	+0.01	-
American Opps		$-	2.091	2.218		-
Environmental Opps		£-	0.836	0.888		-
UK Fixed Interest		£-	1.126	1.194		6.70
Multicurrency Bond		£-	1.003	1.064		5.64
UK Stlg Liquidity		£-	1.030	1.092		9.16
US$ Liquidity		$-	1.617	1.715		6.18
Nomura Global Fund (u)						
Nomura Intl, Nomura Hse, 1 St Martin's-le-Grand, London EC1A 4NP 071-236 8811						
Asia Pacific P'folio		$-		6.90	+0.01	-
Norwich Union Intl Portfolio (u)						
10a boulevard Royal, L-2093 Lux 010 352 46461						
Nth American Equity		$-	2.88			-
European Equity		$-	2.14			-
Pacific Equity		$-	2.32			-
Global Equity		$-	2.13			-
Nth American Bond		$-	2.43			-
European Bond		$-	2.52			-
Global Bond		$-	2.56			-
Global Balanced		$-	2.29			-
US Dollar Liquidity		$-	2.06			-
PRICOA Worldwide Inv Portfolio Sicav (u)						
6, Avenue J P Pescatore, L-2324 Lux (352) 475581						
Pacific Growth Series			$10.50		+0.17	-
S-T Glob Inc Series			$9.77			-
US Growth Series			$9.56		+0.02	-
Regent Global Fund (u)						
14 Rue Leon Thyes L-2636 010 352 4204971						

	Bid Price	Offer Price	+ or -	Yield Gross
Eureca Management S.A.				
Eureca Fd NAV Aug 27	Ecu22.70			
Europe Plus Investissement (SICAV) (u)				
NAV Aug 28	Ecu160.06		+0.53	
Europe Value Fund (u)				
NAV	$10.04			
EurOptec (u)				
European Protection	Ecu87.06	92.13		
Fidelity Intl Inv Mngt (Luxembourg) SA				
Core Sec Portfolio	$8.45	8.87	+0.05	
New Europe Fd	$10.41	10.95	+0.04	
Fidelity Investment (CI) Ltd				
Blncd Port-Hedged	$12.78	13.42	+0.02	
Blncd Port-Unhedged	$11.60	12.18	-0.02	
Discovery	$17.81	18.70	-0.07	
Far East	$56.18	58.99	+0.81	
Frontier	$31.14	32.70	+0.06	
Global Industries	$15.70	16.49	+0.05	
Global Selection	$12.94	13.59	+0.08	
International	$15.40	16.17	+0.07	
Orient	$89.24	93.70	+1.20	
Special Growth	$26.95	28.30	+0.41	
World	$85.35	89.62	-0.24	
The First Korea Smaller Companies Fund				
NAV Jun 30	$9.57		-0.64	
Five Arrows Intl Bond Fund (u)				
Rothschild Asset Management (CI)				
NAV per share	$13.69		+0.02	
Fleming Group				
Fleming Fund Management (Lux)				
Japan Warrant NAV	$2.01			
European Wrrt NAV	$4.64		+0.05	
FF Portfolio	$10.42	10.97	-0.03	
Gartmore Luxembourg S.A.				
Worldwide Growth	7.50	7.88	+0.03	
Phoenix Fd	$14.87		+0.11	
H.C.M. HYPO Capital Mgt Luxembourg SA				

JERSEY (SIB RECOGNISED)

JERSEY (REGULATED)(**)

LUXEMBOURG (SIB RECOGNISED)

LUXEMBOURG (REGULATED)(**)

SWITZERLAND (SIB RECOGNISED)

OTHER OFFSHORE FUNDS

MANAGED FUNDS NOTES

CURRENCIES, MONEY AND CAPITAL MARKETS

FOREIGN EXCHANGES

Dollar at new historic low

THE DOLLAR slipped to eclipse a recent historic low against the D-Mark in late European trading yesterday, worsening tensions in the European exchange rate mechanism, *writes James Blitz.*

After closing at DM1.4028 in New York on Monday night, the US currency gradually declined in European trading to test the record low of DM1.3940 set last Tuesday. In the European afternoon, the currency bottomed out at DM1.3895 and closed in London at DM1.3935, nearly a pfennig down on the day. In New York the dollar fell further to finish at DM1.3900.

Again, the pressure on the dollar had little to do with speculation by interbank traders. It was the result of steady selling in a thinly traded market by institutional investors, who are concerned by the big difference between German and US interest rates.

The US Federal Reserve and European central banks were either unable or unwilling to stem the tide. As the dollar tested the old low, there were rumours in the Frankfurt market of Fed intervention, which temporarily pushed the dollar up by nearly 1¼ pfennigs. But dealers said the market was still not short of dollars and that if intervention had been considered it would have been unlikely to work.

Yesterday's August index from the US National Association of Purchasing Managers was slightly softer than expected at 53.7 per cent, compared to 54.2 per cent in July, and also triggered some selling of the dollar.

According to Mr Jeremy Hawkins, senior economic adviser at Bank of America in London, yesterday's report damped hopes of a good figure in this Friday's non-farm payroll report for August, which influences the market more than most other US indicators. "The implications are that, at best, we will still see an underlying increase in unemployment this Friday," he said.

The dollar could well test new lows this week. Mr Hawkins said that if it opens below DM1.40 in London today, it will be on a downward path to DM1.35. A technical analyst at Deutsche Bank was looking for the dollar to reach a target of DM1.35 based on technical analysis. "If we break DM1.3460, it could go as low as DM1.29," he added.

The dollar's weakness kept sterling close to its ERM floor against the D-Mark as investors exchanged dollars for the German currency. At one stage, the pound was seen to be trading at DM2.7830, its lowest since Britain joined the ERM in October 1990. Further pressure on sterling came at the official close of ERM trading at 4pm in London and the Bank of England was under no formal obligation to intervene to support the currency. The pound closed nearly ½ pfennig down at DM2.7825.

£ IN NEW YORK

Sep 1	Close	Previous Close
£ Spot	2.0015-2.0025	1.9875-1.9885
1 month	1.18-1.17pm	1.12-1.11pm
3 months	3.45-3.42pm	3.46-3.43pm
12 months	12.9-12.8pm	12.8-12.7pm

Forward premiums and discounts apply to the US dollar

EMS EUROPEAN CURRENCY UNIT RATES

	Ecu Central Rates	Currency Amounts Against Ecu Sep 1	% Change from Central Rate	% Spread vs Weakest Currency	Divergence Indicator
Spanish Peseta	133.631	131.579	−1.54	5.92	25
Belgian Franc	42.4032	41.7852	−1.46	5.83	45
D-Mark	2.05586	2.02635	−1.44	5.81	58
Dutch Guilder	2.31643	2.28451	−1.38	5.75	42
Portuguese Escudo	178.735	177.386	−0.75	5.08	11
Irish Punt	0.767417	0.767791	0.05	4.24	−26
Danish Krone	7.84195	7.85059	0.11	4.17	−29
French Franc	6.89509	6.91389	0.27	4.01	−44
Italian Lira	1538.24	1550.09	0.77	3.49	−64
Sterling	0.696904	0.726798	4.29	0.00	−84

Ecu central rates set by the European Commission. Currencies are in descending relative strength. Percentage changes are for Ecu; a positive change denotes a weak currency. Divergence shows the ratio between two spreads: the percentage difference between the actual market and Ecu central rates for a currency, and the maximum permitted percentage deviation of the currency's market rate from its Ecu central rate. Adjustment calculated by Financial Times.

POUND SPOT - FORWARD AGAINST THE POUND

STERLING INDEX

CURRENCY MOVEMENTS

DOLLAR SPOT - FORWARD AGAINST THE DOLLAR

Commercial rates taken towards the end of London trading. † UK, Ireland and ECU are quoted in US currency. Forward premiums and discounts apply to the US dollar and not to the individual currency.

CURRENCY RATES

Sep 1	Bank ‡ rate %	Special * Drawing Rights	European † Currency Unit
Sterling	-	N/A	0.726798
U.S. Dollar	3.00	1.48286	1.45113
Canadian $	5.50	1.77231	1.73511
Austrian Sch.	7.50	14.7070	14.2631
Belgian Franc	8.50	43.1179	41.7852
Danish Krone	9.50	8.08307	7.85059
D-Mark	8.75	2.09039	2.02635
Dutch Guilder	8.50	N/A	2.28451
French Franc	10¼	7.12811	6.91389
Italian Lira	13.75	1598.60	1550.09
Japanese Yen	3.25	182.243	178.242
Norway Krone	-	8.27732	8.02908
Spanish Peseta	-	135.705	131.579
Swedish Krona	16.00	7.64266	7.41235
Swiss Franc	7.00	1.86692	1.80012
Greek Drach.	19	N/A	252.481
Irish Punt	-	N/A	0.767791

‡ Bank rate refers to central bank discount rates. These are not quoted by the UK, Spain and Ireland. † European Commission Calculations. * All SDR rates are for Aug 31

OTHER CURRENCIES

Sep 1	£	$
Argentina	1.9730 - 1.9760	0.9900 - 0.9910
Australia	2.7800 - 2.7820	1.3945 - 1.3955
Brazil	9851.85 - 10221.2	5124.50 - 5124.70
Finland	7.6895 - 7.7135	3.8520 - 3.8550
Greece	344.450 - 349.950	172.860 - 175.630
Hong Kong	15.4110 - 15.4250	7.7280 - 7.7290
Iran	2800.00	1430.00
Korea(Sth)	1551.60 - 1576.65	782.70 - 788.90
Kuwait	0.57800 - 0.57900	0.29000 - 0.29030
Luxembourg	57.35 - 57.45	28.70 - 28.80
Malaysia	4.9650 - 4.9775	2.4910 - 2.4920
Mexico	5979.00 - 5991.95	3074.00 - 3075.00
N Zealand	3.6905 - 3.6945	1.8495 - 1.8515
Saudi Ar	7.4245 - 7.5015	3.7495 - 3.7505
Singapore	3.1795 - 3.1870	1.5950 - 1.5960
S Af (Cm)	5.4405 - 5.4535	2.7280 - 2.7300
S Af (Fn)	7.5020 - 7.5440	3.7595 - 3.7805
Taiwan	50.00 - 50.20	25.05 - 25.15
U.A.E.	7.2695 - 7.3470	3.6715 - 3.6735

*Floating rate. Iran Official rate £121.20 $63.00

EURO-CURRENCY INTEREST RATES

Sep 1	Short term	7 Days notice	One Month	Three Months	Six Months	One Year
Sterling	9½ - 9⅜	9⅝ - 9½	10⅛ - 9¹⁵⁄₁₆	10⅜ - 10¼	10⁵⁄₁₆ - 10³⁄₁₆	10⅜ - 10¼
US Dollar	3⅜ - 3¼	3⅜ - 3¼	3⅜ - 3⅜	3½ - 3⅜	3⅝ - 3½	3¾ - 3⅝
Can. Dollar	5⅛ - 4⅞	5⅛ - 4⅝	4¾ - 4⅝	4¾ - 4⅝	4¾ - 4⅝	4¾ - 4⅝
Dutch Guilder	9⅝ - 9½	9⅝ - 9⅝	9⅝ - 9⅝	9⅝ - 9⅝	9⅝ - 9⅝	9⅝ - 9⅝
Swiss Franc	8 - 7¾	8 - 7¾	7⅞ - 7⅝	7¾ - 7⅝	7¾ - 7⅝	7¾ - 7⅝
D-Mark	9⅝ - 9½	9⅝ - 9½	9¾ - 9⅝	9¾ - 9⅝	9¾ - 9⅝	9⅝ - 9½
French Franc	10¼ - 10	10¼ - 10	10⅜ - 10¼	10⅜ - 10¼	10⅜ - 10¼	10⅜ - 10¼
Italian Lira	16 - 15	16¼ - 15¾	17 - 16½	16½ - 16	16⅛ - 15⅝	16⅛ - 15⅝
Belgian Franc	10¼ - 10⅛	10⅛ - 10	10 - 9⅞	10 - 9⅞	10 - 9⅞	10 - 9⅞
Yen	4⅛ - 4⅛	4⅛ - 4⅛	4⅜ - 4⅛	4 - 3⅞	3⅞ - 3⅞	3⅞ - 3⅞
Danish Krone	10½ - 10	10½ - 10	11½ - 11¼	11½ - 11¼	11¼ - 11	11¼ - 10⅞
Asian $Sing	¼ - ⅛	1 - ½	2 - 1⅞	2¼ - 2	2½ - 2⅜	3 - 2⅞
Spanish Peseta	13 - 10	13 - 10	13⅛ - 12⅞	14 - 13	14⅛ - 13⅝	14½ - 13½

Long term Eurodollars: two years 4½-4⅜ per cent; three years 5⅛-5 per cent; four years 5⅝-5½ per cent; five years 6-5⅞ per cent nominal. Short term rates are call for US Dollars and Japanese Yen; others, two days' notice

EXCHANGE CROSS RATES

Sep 1	£	$	DM	Yen	F Fr.	S Fr.	N Fl.	Lira	C$	B Fr	Pta	Ecu
£	1	1.997	2.782	245.5	9.485	2.475	3.137	2127	2.385	57.40	180.8	1.377
$	0.501	1	1.393	122.9	4.750	1.239	1.571	1065	1.194	28.74	90.54	0.690
DM	0.359	0.718	1	88.25	3.409	0.890	1.128	764.6	0.857	20.63	64.99	0.495
YEN	4.073	8.134	11.33	1000	38.64	10.08	12.78	8664	9.715	233.8	736.5	5.609
F Fr.	1.054	2.105	2.933	258.8	10	2.609	3.307	2242	2.514	60.52	190.6	1.452
S Fr.	0.404	0.807	1.124	99.19	3.832	1	1.267	859.4	0.964	23.19	73.05	0.556
N Fl.	0.319	0.637	0.887	78.26	3.024	0.789	1	678.0	0.760	18.30	57.63	0.439
Lira	0.470	0.939	1.308	115.4	4.459	1.164	1.475	1000.	1.121	26.99	85.00	0.647
C$	0.419	0.837	1.166	102.9	3.977	1.038	1.315	891.8	1	24.07	75.81	0.577
B Fr.	1.742	3.479	4.847	427.7	16.52	4.312	5.465	3706	4.155	100.	315.0	2.399
Pta	0.553	1.105	1.539	135.8	5.246	1.369	1.735	1176	1.319	31.75	100	0.762
Ecu	0.726	1.450	2.020	178.3	6.888	1.797	2.278	1545	1.732	41.68	131.3	1.

Yen per 1,000: French Fr. per 10: Lira per 1,000: Belgian Fr. per 100: Peseta per 100

FINANCIAL FUTURES AND OPTIONS

THREE MONTH ECU
ECU 1m points of 100%

	Close	High	Low	Prev.
Sep	88.62	88.67	88.61	88.71
Dec	88.91	88.99	88.88	89.01
Mar	89.26	89.35	89.24	89.37
Jun	89.76	89.87	89.76	89.90

Estimated volume 857 (1014)
Previous day's open int. 12921 (12565)

THREE MONTH EURO SWISS FRANC
SFR 1m points of 100%

	Close	High	Low	Prev
Sep	92.16	92.22	92.07	92.06
Dec	92.30	92.37	92.25	92.24
Mar	92.54	92.60	92.49	92.47
Jun	92.73	92.76	92.70	92.68

Estimated volume 10293 (9663)
Previous day's open int. 52200 (51860)

THREE MONTH EUROLIRA INT. RATE
LIRA 1,000m points of 100%

	Close	High	Low	Prev.
Sep	83.73	84.15	83.65	84.23
Dec	84.48	84.62	84.39	84.82
Mar	85.36	85.42	85.30	85.64
Jun	85.87	85.95	85.80	86.04

Estimated volume 2774 (3084)
Previous day's open int. 22050 (21966)

FT-SE 100 INDEX *
£25 per full index point

	Close	High	Low	Prev.
Sep	2301.0	2316.0	2293.0	2313.0
Dec	2347.5	2360.0	2340.0	2360.0
Mar	2383.0			2395.5

Estimated volume 6880 (10142)
Previous day's open int. 49144 (48967)

* Contracts traded on APT. Closing prices shown.

POUND - DOLLAR

FT FOREIGN EXCHANGE RATES

Spot	1-mth	3-mth	6-mth	12-mth
1.9970	1.9853	1.9628	1.9295	1.8690

ECU BOND (MATIF)

September	100.76	100.76	+0.18	100.92	100.66	9.89	11,345
December	101.10	101.04	+0.16	101.16	101.00	9.84	4,894

Estimated volume 5,225 † Total Open Interest 16,239

OPTION ON LONG-TERM FRENCH BOND (MATIF)

Strike	Calls December	Calls March	Calls June	Puts December	Puts March	Puts June
103	-	-	-	0.77	0.89	-
104	1.99	-	-	1.03	-	-
105	1.48	-	-	1.41	1.51	-
106	0.95	1.54	-	1.94	1.98	-
107	0.60	-	-	-	-	-
Open Int.	265,664	49,295	-	143,001	34,620	-

Estimated volume 28,050 † Total Open Interest 492,580
† All Yield & Open Interest figures are for the previous day.

BASE LENDING RATES

	%		%		%
Adam & Company	10	Credit Lyonnais	10	McDonnell Douglas Bnk	10
Allied Trust Bank	10	Cyprus Popular Bk	10	Midland Bank	10
AIB Bank	10	Dao Heng Bank Plc	11	Mount Banking	10
● Henry Ansbacher	10	Duncan Lawrie	10	NatWestminster	10
B & C Merchant Bank	10.5	Equatorial Bank plc	10	Northern Bank Ltd	10
Bank of Baroda	10	Exeter Bank Limited	10.5	Nykredit Mortgage Bank	10.5
Banco Bilbao Vizcaya	10	Financial & Gen. Bank	10	Provincial Bank PLC	14
Bank of Cyprus	10	● Robert Fleming & Co.	10	● Rea Brothers	10
Bank of Ireland	10	Robert Fraser & Ptrs	10.5	Roxburghe Bank Ltd.	11
Bank of India	10	Girobank	10	Royal Bk of Scotland	10
Bank of Scotland	10	● Guinness Mahon	10	● Smith & Williamson Secs	10
Banque Belge Ltd	10	Habib Bank AG Zurich	10	Standard Chartered	10
Barclays Bank	10	● Hambros Bank	10	TSB	10
Brit Bk of Mid East	10	Hampshire Trust Plc	13.5	Unibank plc	10
● Brown Shipley	10	Heritable & Gen Inv Bnk	10	● United Bk of Kuwait	10
CL Bank Nederland	10	● Hill Samuel	10	Unity Trust Bank Plc	10
Citibank NA	10	C. Hoare & Co.	10	Western Trust	10
City Merchants Bank	10	Hongkong & Shanghai	10	Whiteaway Laidlaw	10
Clydesdale Bank	10	Julian Hodge Bank	10	Yorkshire Bank	10
Co-operative Bank	10	● Leopold Joseph & Sons	10		
Coutts & Co	10	Lloyds Bank	10		
		Meghraj Bank Ltd	10		

● Members of British Merchant Banking & Securities Houses Association.

MONEY MARKETS

Cautious trade

TRADE IN the sterling cash and futures markets was calmer yesterday as the pound held above its floor against the D-Mark in the European exchange rate mechanism without the need for Bank of England intervention.

However, the dollar's fall to an historic low against the D-Mark in late European trading kindled fears that sterling may weaken in the next few days and trigger a rise in UK interest rates to support the currency. "Quite apart from the worries about the French referendum, the one thing that would frighten the money markets would be a big fall in the dollar," said a trader at one discount house.

UK clearing bank base lending rate 10 per cent from May 5, 1992

Most period rates in the cash market ended the day unchanged. Once again, the Bank of England was seen to be very helpful in its operations, dealing in all four bands and the repurchase agreement (repo) at the established rates. That policy continued to keep the overnight rate below 10 per cent, in spite of the firming of rates further out over the last week. It also led to a softening of the one-month rate by $\frac{1}{16}$ percentage point to $10\frac{1}{16}$ per cent at the close.

Three-month money, an important indicator of where the market thinks rates are moving, again ended at 10⅜ per cent on the offered side. Both the six-month and one-year rates again finished at 10⅜ per cent offered.

In the morning the Bank forecast a shortage of £900m which, in the view of one trader, was the bulk of the shortage for the week. In early operations the Bank purchased £250m of Band 1 bank bills at 9⅞ per cent, £87m of Band 3 bank bills at 9¾ per cent, £5m of Band 4 Local Authority bills and £167m of Band 4 bank bills at $9\frac{11}{16}$ per cent, and £382m in the repo at $9\frac{15}{16}$ per cent. The Bank did not operate in the afternoon.

Trade in sterling futures was quieter than last week, with volume down to around 20,000 lots in the September and December contracts combined. But in the afternoon, sterling's fall forced the December contract down to its opening level.

The September contract rose to a high of 89.28 in the morning, and closed at that level, up 8 basis points from its opening. The December contract started at 89.15, peaked at 89.22 at around lunchtime, but ended at 89.17.

FT LONDON INTERBANK FIXING

(11.00 a.m. Sep.1) 3 months US dollars		6 months US Dollars	
bid 3⅜	offer 3½	bid 3½	offer 3⅝

The fixing rates are the arithmetic means rounded to the nearest one-sixteenth, of the bid and offered rates for $10m quoted to the market by five reference banks at 11.00 a.m. each working day. The banks are National Westminster Bank, Bank of Tokyo, Deutsche Bank, Banque National de Paris and Morgan Guaranty Trust.

MONEY RATES

NEW YORK — Treasury Bills and Bonds

4pm

Prime rate	6	One month	3.10	Three year	4.60
Broker loan rate	5¼	Two month	3.29	Five year	5.53
Fed. funds	3¼	Three month	3.22	Seven year	6.07
Fed funds at intervention	-	Six month	3.32	10-year	6.56
		One year	3.44	30-year	7.38
		Two year	4.12		

Sep.1	Overnight	One Month	Two Months	Three Months	Six Months	Lombard Intervention
Frankfurt	9.65-9.75	9.75-9.85	9.75-9.85	9.80-9.90	9.80-9.90	9.75
Paris	10-10⅛	10⅛-10¼	10⅛-10¼	10⅛-10⅜	10½-10⅝	9.60
Zurich	7¼-7⅜	7⅝-7¾	-	7⅝-7¾	-	-
Amsterdam	9.75-9.88	9.78-9.83	-	9.75-9.80	-	-
Tokyo	4⅛-4¼	4⅛-4¼	-	-	-	-
Milan	15⅛-15¼	17⅛-17½	-	16½-17¼	-	-
Brussels	10-10¼	9⅞-10	-	9⅞-10	-	-
Dublin	10-10¼	10½-10⅝	10⅜-10¼	10⅞-10⅞	10⅝-10⅞	-

LONDON MONEY RATES

MONEY MARKET FUNDS

Money Market Trust Funds

Money Market Bank Accounts

CROSSWORD

No.7,940 Set by DANTE

ACROSS

1 We're told he was the sole beneficiary of Faust (14)
10 Come again about the dog (5)
11 They suffer from a lack of balance (9)
12 Caustic word-play by a chap (7)
13 Free of duty (7)
14 Vehicle to travel as freight (5)
16 Sailor sent to look back for those missing (9)
19 Italian Islander has love for a local dance (9)
20 Cut Sophia Loren's initials on a tree (5)
22 Manila's wild creatures (7)
25 Vessel that shoots over the waves (7)
27 It smells awful when it goes off (6-4)
28 Set out for a holiday (5)
29 Investor in pop music watching all one's acts? (9,5)

DOWN

2 Odd mechanical contrivance (9)
3 By the sound of it, gather a crowd (5)
4 Start a bus under repair - they're lying underneath (9)
5 He has to be what he is (5)
6 They give actors difficulty – what a shame! (4,5)
7 Circuits have direction to go downhill (5)
8 Members of the family, I stress, are different (7)
9 Subject matter about right for a mundane circle (6)
15 Well-filled vessel (3-6)
17 Plead with a number to fill gaps up in washing kit (6-3)
18 Package returned, give address with added detail (9)
19 Spares around Romania's capital are more scarce (7)
21 In top gear? (6)
23 Feeling frail, I accept it's partly to do with the hip (5)
24 Heading for Finland in the stamp album (5)
26 Hose in New York left running (5)

Solution to Puzzle No.7,939

WORLD STOCK MARKETS

AUSTRIA | BELGIUM/LUXEMBOURG | DENMARK | FINLAND | FRANCE | FRANCE (continued) | GERMANY | GERMANY (continued) | ITALY | NETHERLANDS | NETHERLANDS (continued) | NORWAY | SPAIN | SWEDEN | SWEDEN (continued) | SWITZERLAND | SOUTH AFRICA | JAPAN | AUSTRALIA | AUSTRALIA (continued) | HONG KONG | MALAYSIA | SINGAPORE

[illegible]

Price data supplied by Telekurs.

NOTES – Prices on this page are as quoted on the individual exchanges and are mostly last traded prices. [illegible]

CANADA

TORONTO

4 pm close September 1

[illegible]

MONTREAL

4 pm close September 1

[illegible]

Total Sales 9,783,400 shares

INDICES

NEW YORK

DOW JONES	Sep 1	Aug 31	Aug 28	Aug 27	1992 HIGH	1992 LOW	Since compilation HIGH	Since compilation LOW
Industrials	3266.26	3257.35	3267.61	3254.64	3413.21 (1/6)	3172.41 (2/1)	3413.21 (1/6/92)	41.22 (2/7/32)
Home Bonds	102.04	102.16	102.17	102.03	102.47 (18/8)	98.41 (20/3)	102.47 (18/8/92)	54.99 (1/10/81)
Transport	1240.23	1221.26	1216.28	1211.40	1467.68 (20/2)	1204.40 (26/8)	1532.01 (5/9/89)	12.32 (8/7/32)
Utilities	220.02	219.02	219.52	218.14	225.59 (3/1)	200.74 (8/4)	236.23 (2/1/90)	10.50 (8/4/32)

DJ Ind. Day's High 3279.23 (3287.06) Low 3239.79 (3244.92) (Theoretical)
Day's High 3266.26 (3274.10) Low 3254.37 (3254.64) (Actual)

STANDARD AND POOR'S

	Sep 1	Aug 31	Aug 28	Aug 27	1992 HIGH	1992 LOW	Since compilation HIGH	Since compilation LOW
Composite ‡	416.07	414.03	414.84	413.53	425.09 (3/8)	394.50 (8/4)	425.09 (3/8/92)	4.40 (1/6/32)
Industrials	489.61	487.27	487.72	485.97	499.51 (3/8)	470.91 (8/4)	499.51 (3/8/92)	3.62 (21/6/32)
Financial	35.11	34.86	35.15	35.04	36.66 (3/8)	32.40 (8/4)	36.66 (3/8/92)	8.64 (1/10/74)
NYSE Composite	229.02	228.03	228.43	227.73	233.66 (3/8)	217.92 (8/4)	233.66 (3/8/92)	4.46 (25/4/42)
Amex Mkt Value	381.44	380.78	381.18	381.00	418.99 (12/2)	374.04 (26/6)	418.99 (12/2/92)	29.31 (9/12/72)
NASDAQ Composite	565.61	563.12	563.56	563.27	644.92 (12/2)	547.84 (26/6)	644.92 (12/2/92)	54.87 (31/10/72)

	Aug 28	Aug 21	Aug 14	year ago (approx.)
Dow Industrial Div Yield	3.16	3.17	3.11	3.01

	Aug 26	Aug 19	Aug 12	year ago (approx.)
S & P Industrial div. yield	2.64	2.62	2.62	2.63
S & P Indl P/E ratio	27.18	29.06	29.00	21.71

NEW YORK ACTIVE STOCKS

Tuesday	Stocks traded	Closing price	Change on day
RJR Nabisco	2,878,900	8½	-⅛
Diagnostek	2,364,000	16½	
Merck	2,219,000	48¼	-⅛
Telefonos	1,740,500	45¼	+⅛
Global Mar	1,729,400	2⅛	...
Compaq Comp	1,616,200	32½	+¼
ADV Micro	1,532,000	10½	+⅛
Philip Morris	1,506,700	82⅛	+⅛
Bk Of Boston	1,482,700	21	+⅝
NationsBank	1,360,500	43½	+⅝

TRADING ACTIVITY

† Volume Millions	Sep 1	Aug 31	Aug 28
New York SE	172.650	160.230	152.230
Amex	10.508	11.225	11.056
NASDAQ	(u)	133.532	127.111
NYSE			
Issues Traded	2,315	2,324	2,307
Rises	949	862	933
Falls	741	865	753
Unchanged	625	597	621
New Highs	54	58	54
New Lows	22	17	25

CANADA

TORONTO	Sep 1	Aug 31	Aug 28	Aug 27	1992 HIGH	1992 LOW
Metals & Minerals	2924.51	2949.71	2973.06	2969.71	3238.87 (16/1)	2828.26 (8/4)
Composite	3407.63	3402.92	3403.00	3392.60	3666.00 (16/1)	3318.10 (8/4)
MONTREAL Portfolio	1773.19	1776.13	1783.00	1776.41	1937.59 (16/1)	1727.04 (8/4)

Base values of all indices are 100 except NYSE All Common – 50, Standard and Poor's – 10; and Toronto Composite and Metals – 1000. Toronto indices based 1975 and Montreal Portfolio 4/1/83. † Excluding bonds ‡ Industrial, plus Utilities, Financial and Transportation (c) Closed (u) Unavailable ♠ The DJ Indl. index theoretical day's highs and lows are the averages of the highest and lowest prices reached during the day by each stock; whereas the actual day's highs and lows (supplied by Telekurs) represent the highest and lowest values that the index has reached during the day. (The figures in brackets are previous day's).

	Sep 1	Aug 31	Aug 28	Aug 27	1992 HIGH	1992 LOW
AUSTRALIA						
All Ordinaries (1/1/80)	1542.5	1547.2	1553.9	1543.3	1684.50 (22/5)	1517.40 (25/8)
All Mining (1/1/80)	679.9	678.7	682.6	673.7	726.80 (3/7)	658.90 (25/8)
AUSTRIA						
Credit Aktien (30/12/84)	302.37	305.20	300.13	301.27	458.51 (24/2)	291.41 (13/8)
Traded Index (2/1/91)	724.60	735.58	717.36	716.62	1099.43 (24/2)	682.96 (13/8)
BELGIUM						
BEL20 (1/1/91)	1050.06	1057.31	1062.13	1059.04	1235.40 (2/6)	1050.06 (1/9)
DENMARK						
Copenhagen SE (3/1/83)	(u)	278.99	279.72	280.03	365.29 (15/1)	278.99 (31/8)
FINLAND						
HEX General (28/12/90)	562.1	572.9	571.8	567.7	935.90 (24/2)	559.30 (26/8)
FRANCE						
CAC General (31/12/82)	466.24	468.01	466.51	464.95	555.93 (12/5)	464.90 (26/8)
CAC 40 (31/12/87)	1674.23	1684.88	1687.53	1687.56	2077.49 (11/5)	1667.72 (25/8)
GERMANY						
FAZ Aktien (31/12/58)	601.16	605.04	593.85	596.22	725.26 (26/5)	582.34 (26/8)
Commerzbank (1/12/53)	1698.60	1709.00	1676.40	1684.70	2043.80 (25/5)	1642.70 (26/8)
DAX (30/12/87)	1518.70	1541.25	1516.47	1513.42	1811.57 (25/5)	1468.91 (25/8)
HONG KONG						
Hang Seng Bank (31/7/64)	5711.57	(u)	5628.60	5460.32	6162.53 (16/7)	4301.78 (2/1)
IRELAND						
ISEQ Overall (4/1/88)	1215.14	1218.25	1219.65	1214.02	1469.57 (17/1)	1208.18 (26/8)
ITALY						
Banca Com. Ital. (1972)	384.99	390.93	393.60	393.29	551.59 (6/2)	384.99 (1/9)
MIB General (2/1/92)	755.0	767.0	772.0	771.0	1086.00 (5/2)	755.00 (1/9)
JAPAN						
Nikkei (16/5/49)	17740.06	18061.12	17970.0	17555.00	23801.18 (6/1)	14309.41 (18/8)
Tokyo SE (Topix) (4/1/68)	1370.27	1385.51	1379.97	1340.45	1763.43 (6/1)	1102.50 (18/8)
2nd Section (4/1/68)	1813.26	1801.82	1760.38	1710.22	2459.85 (6/1)	1502.77 (19/8)
MALAYSIA						
KLSE Composite (4/4/86)	573.50	(c)	574.73	567.56	619.06 (20/2)	546.63 (14/1)
NETHERLANDS						
CBS Ttl.Rtn.Gen (End 1983)	280.7	282.6	282.3	283.8	314.90 (9/6)	274.00 (8/1)
CBS All Shr (End 1983)	191.3	192.6	192.8	193.8	215.50 (26/5)	189.70 (25/8)
NORWAY						
Oslo SE (Ind) (2/1/83)	565.79	575.24	596.49	599.66	772.74 (18/5)	532.43 (25/8)
PHILIPPINES						
Manila Comp (2/1/85)	1365.91	1376.66	1386.77	1426.31	1580.95 (11/6)	1083.01 (17/3)
SINGAPORE						
SES All-Singapore (2/4/75)	369.14	369.30	365.57	365.97	416.99 (21/1)	354.15 (19/8)
SOUTH AFRICA						
JSE Gold (28/9/78)	954.04	938.0	935.0	933.0	1327.00 (21/1)	929.00 (25/8)
JSE Industrial (28/9/78)	4074.06	4054.0	4060.0	4058.0	4699.00 (4/6)	3973.00 (14/8)
SOUTH KOREA**						
Korea Comp Ex. (4/1/80)	558.60	562.80	518.56	520.61	691.48 (8/2)	459.07 (21/8)
SPAIN						
Madrid SE (30/12/85)	206.37	204.97	205.61	205.46	266.51 (28/2)	203.76 (26/8)
SWEDEN						
Affarsvarlden Gen (1/2/37)	751.6	772.70	780.00	786.90	1014.50 (11/5)	732.30 (25/8)
SWITZERLAND						
Swiss Bank Ind. (31/12/58)	816.9	819.3	817.5	816.4	883.40 (11/5)	748.50 (8/1)
SBC General (1/4/87)	610.2	611.9	609.1	607.2	682.50 (11/5)	596.40 (26/8)
TAIWAN**						
Weighted Price (30/6/66)	3960.45	3946.35	3852.45	3800.97	5391.63 (30/1)	3733.06 (20/8)
THAILAND						
Bangok SET (30/4/75)	753.53	746.51	753.26	749.04	832.39 (7/4)	667.84 (19/5)
WORLD						
M.S. Capital Intl (1/1/70) ($)	505.3*	506.6	506.5	500.3	542.10 (7/1)	467.50 (8/4)
Euro Top-100 (26/6/90)	803.70	811.16	810.03	810.73	976.55 (25/5)	793.32 (25/8)

**Saturday August 29: Taiwan Weighted Price (c), Korea Comp Ex. 539.21
‡ Subject to official recalculation *Calculated at 15.00 GMT.
Base values of all indices are 100 except Austria Traded, BEL20, HEX Gen., MIB Gen., Euro Top-100, ISEQ Overall and DAX – 1,000, JSE Gold – 255.7, JSE 26 Industrials – 264.3 and Australia All Ordinary and Mining – 500. (c) Closed. (u) Unavailable.

TOKYO - Most Active Stocks

Tuesday, September 1, 1992

	Stocks Traded	Closing Prices	Change on day
Meiji Milk	4.8m	1,110	+50
Nippon Zeon	2.0m	725	+5
Jpn Mtl & Chem	1.2m	810	
Green Cross	1.1m	1,680	-80
Kawasaki Kisen	1.1m	423	+4
Okamoto Inds	1.0m	1,300	-130
Nippon Kayaku	0.9m	835	+8
Taiyo Fishery	0.8m	501	+31
Daiichi Seiyaku	0.6m	1,770	+70
Ishihara Sangyo	0.7m	601	-19

4 pm close September 1

NEW YORK STOCK EXCHANGE COMPOSITE PRICES

1992 High	1992 Low	Stock	Div.	Yld. %	P/E	Sls 100s	High	Low	Close Quote	Ch'ge Prev. Close
15⅞	11⅞	AAR Corp	0.48	4.0	19	61	12¼	12	12⅛	+⅛
26	18	A L Labs A	0.18	0.8	78	51	21⅞	21⅝	21⅞	+⅛
68¼	52⅝	AMP Inc	1.62	2.8	21	2698	55	54⅛	54½	+¼
80¼	55	AMR			20	6793	57½	56½	57⅛	+1⅞
2⅛	1⅛	ARX			18	41	1⅝	1⅝	1⅝	
53½	36⅛	ASA	2.00	5.5	24	170	37	36½	36½	-⅛
34¼	26⅛	Abbott Lab	0.60	1.9	22	5179	31½	30⅝	31½	+1
13⅞	11⅞	Abitibi Pr	0.50	4.1	6	23	12¼	12⅛	12⅛	+⅛
11⅝	10⅛	ACM Gvt In	1.08	9.5		221	11⅜	11⅛	11⅜	+¼
10⅞	9⅛	ACM GvOpp	0.92	9.4		264	9⅞	9¾	9¾	
9½	8½	ACM Gvt Sp x	0.80	8.8		652	9⅜	9¼	9¼	-⅛
11¼	10⅛	ACM Gvt Se x	1.08	9.7		181	11⅛	11	11⅛	+⅛
10¼	8⅝	ACM Man	0.98	9.7		427	u10¼	10⅛	10⅛	-⅛
12⅞	10½	ACM Managd	0.99	9.3		147	10⅜	10⅝	10⅝	-⅛
11⅞	4⅛	Acme Cleve	0.40	5.9	13	47	6⅞	6⅛	6⅞	
6¼	4⅜	Acme Elect			38	41	5	4⅞	5	
33¼	17⅛	Acuson			11	1907	17⅞	17½	17½	-⅜
19½	18⅛	Adams Expr	0.48	2.5	0	201	19⅜	19	19⅜	+½
49⅛	29½	Ad Micro x	3.00	8.1		198	37¼	36⅞	37¼	+⅜
21½	7½	Ad Micro P	3.00	28.6	3	1060	10⅝	10⅛	10½	+⅛
8⅛	4⅞	Advest Grp	0.16	3.1	64	63	5⅛	5	5⅛	+⅛
39	33	Aegon ADR	1.68	4.3	7	849	u39½	38⅞	39⅛	+¼
47	38⅜	Aetna Lf	2.76	7.1	9	1469	38⅝	d38¼	38⅝	
12⅞	8⅛	Ahli A	0.24	2.1	13	949	11⅛	10⅞	11¼	+⅞
34	24	Aflac	0.44	1.4	15	699	32⅝	32⅛	32¼	-½
19⅜	15⅛	Ahmanson	0.88	5.7		73478	15⅝	15⅜	15½	
22½	5⅝	Aileen Inc			10	111	6⅝	6⅛	6⅛	-⅛
49½	36½	Air Pr Chm	0.86	2.0	18	1139	42⅞	42	42⅛	+½
23⅛	12½	Airborne Frt	0.30	2.2	27	627	13⅞	13⅛	13⅞	+⅝

Continued on next page

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NYSE COMPOSITE PRICES

Continued from previous page

1992 High	Low	Stock	Div.	Yld. %	P/E	Sls 100s	High	Low	Close Quote	Ch'ge Prev. Close
68	49⅞	SchergPl	1.56	2.6	17	6385	69¼	58½	59¼	+1¼
69	52¼	Sch'berger x	1.20	1.8	19	5287	68¾	67⅝	67¾	-1⅛
37¾	20⅛	SchwabCl	0.24	1.1	11	443	22⅛	21¾	22	-½
10⅞	6¾	Schwitzer			56	255	8½	d8¼	8¼	-½
27⅞	16¼	ScientAtln x	0.16	0.6	39	498	u28	27½	27⅝	+¼
10⅞	7¼	Scotman	0.10	1.2	103	246	8¼	8	8¼	
45	34½	ScottPaper	0.80	2.2	181	145	36	35¼	36⅞	-⅛
17½	13⅝	ScuddrNAsF	0.22	1.4		24	15⅞	15½	15¾	+⅛
9½	8⅞	ScuddrNEuF	0.30	3.3		163	9⅛	9	9	
24	16	Sea Contrs	0.20	1.1	11	56	18⅝	18¼	18⅝	+⅛
16¼	14⅞	SeaC1 4625 x	1.46	9.6		7	15½	15¼	15¼	
31	26⅞	Seagram Co x	0.56	2.0	15	1249	28½	28¼	28½	+¼
29¾	21⅞	Seagull En			100	676	29½	29¼	29¼	-¼
56⅞	43¼	Sealed Air			22	91	45	44⅞	44½	-½
23	12⅛	SPX Corp	0.40	2.2	25	88	18⅝	18⅛	18½	-⅛
48	37	Sears Roeb x	2.00	4.8	11	4064	41⅞	41⅜	41⅞	+⅛
13¼	11⅞	Seligm Sel	0.84	6.7		142	12¾	12⅝	12⅝	-⅛
31¼	22¾	Sensormat	0.30	1.3	21	299	23⅞	23½	23¼	
51	36¼	Sequa A	0.60	1.6	38	9	38	37½	37½	-½
58	45½	Sequa B	0.50	1.1	25	26	47½	47	47½	
18¾	15¼	ServiceCpl	0.40	2.3	16	1745	17⅜	17⅛	17¼	-⅛
29⅞	22	Servicemtr	1.18	3.9	17	330	u29⅞	29⅛	29⅞	+⅛
28⅞	17	Shaw Ind	0.30	1.2	28	2741	24⅞	24½	24½	-¼
19¼	8⅞	Shawmut Nt	1.00	6.8	25	1277	14⅝	14⅛	14⅝	+½
10¼	6⅞	Shelby Wil	0.24	3.0	36	3	8⅛	8⅛	8⅛	
57⅞	45⅝	Shell Tr&T	2.57	4.6	12	705	56⅛	55⅞	56⅛	-¼
30⅞	25⅛	Sherwin Wi	0.44	1.5	18	1581	29	28	29	+1
27¼	16¾	Shoneys			14	8861	17⅜	d16½	16¾	-½
14⅞	8¼	Showboat	0.10	0.8	11	62	12	11⅞	11⅞	

1992 High	Low	Stock	Div.	Yld. %	P/E	Sls 100s	High	Low	Close Quote	Ch'ge Prev. Close
33¾	24⅞	Xtra 1.94	1.94	6.3		121	30⅞	30¾	30⅞	+⅛
45⅞	28½	Xtra Corp	0.80	1.9	12	210	42¼	42⅛	42¼	
29½	25¼	Yankee Egy x	1.66	5.7	13	15	u29½	29⅛	29⅛	
1½	½	Zapata			25	405	1	1	1	
11⅛	6⅜	ZenithElec			4	105	6⅞	6¾	6⅞	+⅛
19½	14½	Zenith Nat	1.00	5.7	8	264	17⅝	17½	17⅝	-⅛
7½	6	Zenix Inc x	0.82	11.7		204	7⅛	7	7	
13⅛	10	Zero Corp	0.40	3.3	19	280	12¼	11⅞	12⅛	+⅛
38	27¾	Zurn Ind	0.88	2.8	34	304	31⅛	30⅞	31⅛	
14⅛	12	Zweig Fund	1.12	8.7		156	12⅞	12¾	12⅞	
11	9½	Zweig Totl	0.96	9.4		437	10⅜	10¼	10¼	

Price data supplied by Telekurs

Yearly highs and lows reflect the period from Jan 1, excluding the latest trading day. Where a split or stock dividend amounting to 25 percent or more has been paid, the year's high-only range and dividend are shown for the new stock only. Unless otherwise noted, rates of dividend are annual disbursements based on the latest declaration. Sales figures are unofficial.

a-dividend also extra(s). b-annual rate of dividend plus stock dividend. c-liquidating dividend. cld-called. d-new yearly low. e-dividend declared or paid in preceding 12 months. g-dividend in Canadian funds, subject to 15% non-residence tax. i-dividend declared after split-up or stock dividend. j-dividend paid this year, omitted, deferred, or no action taken at latest dividend meeting. k-dividend declared or paid this year, an accumulative issue with dividends in arrears. n-new issue in the past 52 weeks. The high-low range begins with the start of trading. nd-next day delivery. P/E price-earnings ratio. r-dividend declared or paid in preceding 12 months, plus stock dividend. s-stock split. Dividends begin with date of split. sls-sales. t-dividend paid in stock in preceding 12 months, estimated cash value on ex-dividend or ex-distribution date. u-new yearly high. v-trading halted. vi-in bankruptcy or receivership or being reorganised under the Bankruptcy Act, or securities assumed by such companies. wd-distributed. wi-when issued. ww-with warrants. x-ex-dividend or ex-rights. xdis-ex-distribution. xw-without warrants. y-ex-dividend and sales in full. yld-yield. z-sales in full.

AMEX COMPOSITE PRICES

4 pm close September 1

Stock	Div.	P/E	Sls 100s	High	Low	Close	Chng
Perini	0.80	20	21	11⅛	d10⅞	11⅛	
Pet HI&P	1.14	13	5	15¾	15⅝	15¾	
Phil LD	0.21	16	449	38¾	37⅝	38¾	+1¼
Pittway A	1.10	16	209	30	29¾	29⅞	-⅛
Ply Gem	0.12	23	73	10⅞	10⅝	10¾	-⅛
PMC	0.66	15	447	10⅜	10⅛	10⅛	
PresidioA	0.10	1	98	1¾	d1⅝	1⅝	-¼

Stock	Div.	P/E	Sls 100s	High	Low	Close	Chng
Cal Egy		14	1046	11⅞	11¾	11⅞	+⅛
Calprop		0	17	1	1	1	
Can Marc	0.23	9	2	12⅞	12⅞	12⅞	
Cmbre A	0.01	9	444	7½	7⅛	7½	
Chambers		9	10	7⅝	7½	7⅝	+⅛
Champion		38	43	4	3⅞	3⅞	
Chiles		0	30	1⅛	1¼	1⅛	+⅛
Giant FdA	0.68	15	486	20	19⅝	20	+⅛
Glatfltr	1.40	14	107	23⅞	22¾	22⅞	-½
Goldfield		3	67	½	¼	½	+⅛
Greenman		6	124	5⅛	5	5	-⅛
Gulf Cda	0.34	6	93	4⅝	4½	4⅝	+⅛
Hasbro	0.20	19	1627	30⅝	29⅞	30¼	+⅛
Health Ch		8	50	1½	1⅜	1⅜	-⅛
Healthvst		5	44	1⅞	1¾	1¾	
Heico Cp	0.16	17	10	13¼	13¼	13¼	+⅛
Hillhaven		9	482	2⅝	2½	2⅝	
Nat Pant		2	700	3⅛	3	3¼	+⅛
New Line		30	81	11⅞	11	11⅞	+¼
NY Times A	0.56	30	1039	26⅜	25	26¼	+⅛
NthCanOil	0.17	91	33	u13⅞	13¾	13¾	
Numac O&G		2	139	4⅜	4¼	4¼	
NV Ryan		0	111	⅝	½	½	
Odetics A		32	32	5¼	5⅛	5⅛	
Olsten	0.32	26	155	29	28¾	29	+⅛
OMI Corp	0.14	7	20	0	d0	6⅝	
Pall Corp	0.36	26	748	26⅛	25⅝	25⅞	+⅛
Pegasus G	0.10	38	1252	u17⅞	17	17⅜	+⅛
Vivigen		56	473	14⅞	14¾	14⅞	+⅛
Wang Lab C		0	11	3½	3⅜	3⅜	+⅛
Wang Lab B		0	7679	⅝	½	⅝	+⅛
Weatherfd		18	623	6¾	6⅛	6½	-⅛
Wesamer	0.52	8	226	19	18½	19	+½
WRIT x	1.12	17	80	13⅛	12¾	13⅛	+⅛
Worthen	0.10	9	13	21½	21⅛	21⅜	
Xytronix		7	121	7⅛	6½	7	-⅛

NASDAQ NATIONAL MARKET

4 pm close September 1

Stock	Div.	P/E	Sls 100s	High	Low	Last	Chng
Xilinx		22	3823	20½	19¼	20	-½
Xoma Corp		6	2297	11½	d11	11	-¼
Yellow Fr	0.94	21	1196	25¾	25⅛	25½	+¼
York Rsch		7	1702	7	6⅝	6⅞	-⅛
ZionsUtah	1.44	10	127	55¼	54	54¼	

FINANCIAL TIMES

Wednesday September 2 1992

AMERICA

Dow holds its ground as currency declines

Wall Street

US STOCK markets held their ground yesterday in the wake of a declining dollar and some mostly negative economic reports, *writes Patrick Harverson in New York.*

At the close the Dow Jones Industrial Average was up 8.91 at 3,266.26, having spent the entire day near to Monday's close. The *more broadly based* Standard & Poor's 500 gained 2.04 at 416.07, while the American SE composite firmed 0.66 to 381.44 and the Nasdaq com*posite added 2.49 at 565.61.*

Turnover on the New York SE was fairly light at 174m shares, and rises outpaced declines by 924 to 763.

Although the stock markets have been hostage to the dollar's fortunes in recent weeks, yesterday's drop in the US currency's value to an all-time low against the D-Mark had little effect on equities.

Attention was otherwise focused on economic news. A 0.1 per cent rise in July leading indicators, a 0.6 per cent decline in construction spending in the same month, and the slight fall in the National Association of Purchasing Management's August index confirmed that economic activity *remained extremely sluggish* in spite of the lowest domestic interest rates in 30 years.

Lennar lost $1½ to $28¼ on news that some Florida home*owners, whose Lennar-built* houses were destroyed by Hurricane Andrew, plan to file a suit against the company. The decline may also have been a *natural correction to recent* gains in Lennar stock, prompted by expectations that the company would benefit from the demand for new *homes in south Florida.*

Another stock affected by the hurricane was American Reliance, which dropped $2⅝ to $17⅞ on the American Stock *Exchange on the expectation* that the company will incur substantial direct losses from property damage in Florida.

Oil issues, which have posted strong gains in recent months after a long period in the doldrums, were mostly lower after broking house Wertheim Schroder cut its ratings on six big oil companies, arguing that they had reached, or were near, their target prices. Royal Dutch shed $⅝ to $90⅝, Texaco $⅞ to $65⅝, Atlantic Richfield $1¼ to $114⅜ and Amoco $¼ to $51¼.

Airline stocks were in demand as investors anticipated an improvement in carriers' business now that the summer fare war is over. UAL advanced $3¾ *to $107½*, Delta rose $2½ to $52¼, USAir put on $¼ to $13½ and AMR, parent of American Airlines, gained $1⅞ at $57⅞.

Canada

TORONTO share prices closed steady for the second consecu*tive day. The TSE 300 index* gained 4.7 at 3,407.6 and advancing issues led declines by 294 to 218 after a fair volume of 30.2m shares.

PWA said it has begun legal action to have Gemini Group Automated Distribution Systems declared insolvent. Gemini termed the action without merit, said it has a strong financial position and that PWA had boycotted meetings of the Gemini board. PWA, which was up 43 cents on Monday, lost 15 cents to C$3.15. Air Canada, which is a partner with Gemini, gained 10 cents at C$4.50.

Timely leaks lift Tokyo off the bottom

By William Cochrane

Last week demonstrated *the Japanese market's* ability to anticipate events; and, linked with this, it showed that the prospect of determined and broadly based *government action* can do more for equities than a period of masterly inactivity.

Japan's Y10,700bn ($87bn) economic stimulus package was not detailed until after the Tokyo equity market closed last Friday, but there was a succession of helpful leaks, mainly on Thursday and Friday, which left the FT-Actuaries Japan index up 9.9 per cent last week after a rise of 11.8 per cent over the previous five trading days.

In two weeks, Tokyo has recovered from a fall of 33.7 per cent this year to one of 18.5 per cent, and from a position of the worst performer in the World *Index series to fourth from bot*tom, after Finland, Denmark and Italy.

Europe's decline continued with a fall of 2 per cent on the week, and a neutral performance in the US left the World Index 1.9 per cent higher on balance. The time is ripe, it seems, for the analysts, investment strategists and asset allocation specialists to guide their clients.

On Japan, Mr Shigeki Sakaki says in an economic commentary for Nomura International that the government package includes public loans which may crowd out private loans and, therefore, not increase demand for goods and services. Thus, he says, the package's true effect on the economy may be Y4,000bn to Y5,000bn, or about 1 per cent of GNP.

Mr Sushil Wadhwani, the Goldman Sachs strategist, says the move is evidence of a change in the attitude of the authorities to the market – *"equivalent, so to speak, to* drawing a line in the sand" – but that while a bottom in the market may have been found, that equities are now well up *with events and there is scope* for short-term disappointment.

On Europe, Mr Wadhwani is more sanguine. European equities, he notes, have fallen by *more than 15 per cent since the* Danish referendum three months ago, on European monetary union uncertainty and downgrades of economic forecasts partly precipitated by pessimism about German interest rates.

He adds, however, that using a quantitative framework, neither the rise in bond yields nor the actual downgrading of earnings growth stemming from these uncertainties can explain more than a small proportion of the actual decline in share prices.

There are other opinions, notably from Merck Finck in Düsseldorf, which says the sharp and painful corrections necessary to adjust the markets' "notoriously optimistic" profit and interest rate expectations to reality still have *some way to go.*

Mr Wadhwani thinks European equities are a "good medium-term buying opportunity". There is short-term risk *in the French referendum, but* a 'Yes' vote would prompt a general rise, while there would be little risk to German, Dutch or Swiss equities if the voters were to say *'No'*.

MARKETS IN PERSPECTIVE

	% change in local currency †				% change sterling †	% change in US $ †
	1 Week	4 Weeks	1 Year	Start of 1992	Start of 1992	Start of 1992
Austria	-3.60	-7.36	-30.03	-15.99	-14.46	-9.39
Belgium	-3.88	-7.11	-8.87	-7.49	-6.89	-0.31
Denmark	-2.81	-10.38	-27.93	-22.42	-20.43	-15.71
Finland	-6.10	-18.23	-41.56	-26.61	-26.14	-21.76
France	-2.43	-3.09	-5.93	-2.89	-0.92	+4.95
Germany	-0.77	-6.95	-13.30	-7.71	-6.06	-0.49
Ireland	-1.71	-3.45	-15.82	-11.62	-10.52	-5.22
Italy	-3.24	-1.86	-25.54	-20.63	-20.10	-15.36
Netherlands	-1.74	-2.35	-1.69	+1.30	+2.95	+9.06
Norway	+5.32	-11.07	-36.76	-18.07	-17.17	-12.28
Spain	-2.28	-4.82	-22.91	-16.97	-17.02	-12.10
Sweden	+0.91	-6.83	-21.83	-5.62	-4.03	+1.67
Switzerland	-0.99	-3.66	+1.05	+4.69	+6.31	+12.61
UK	-2.39	-4.09	-13.16	-7.80	-7.80	-2.33
EUROPE	-2.01	-4.46	-12.42	-7.28	-6.11	-0.87
Australia	-0.50	-4.44	-2.00	-7.89	-17.77	-12.89
Hong Kong	+1.29	-5.53	+39.45	+30.20	+23.71	+31.05
Japan	+9.92	+14.51	-16.70	-18.51	-22.02	-17.39
Malaysia	+2.48	-4.12	+5.34	+0.18	+3.22	+9.34
New Zealand	-0.26	-6.65	-2.95	-9.40	-14.40	-9.32
Singapore	+1.84	-9.93	-5.87	-14.40	-18.11	-13.25
Canada	+0.14	-1.00	-5.78	-4.38	-12.75	-7.58
USA	-0.02	-2.18	+4.94	-0.54	-6.11	-0.54
Mexico	+0.34	-6.03	+10.11	-4.15	-10.72	-5.37
South Africa	-1.42	-10.45	-8.82	-10.46	-27.68	-23.39
WORLD INDEX	+1.90	+0.87	-6.39	-7.80	-11.36	-11.37

† Based on August 28th 1992. Copyright, The Financial Times Limited, Goldman, Sachs & Co, and County NatWest Securities.

ASIA PACIFIC

Nikkei drops back below 18,000 on profit-taking

Tokyo

JAPANESE shares ran into *profit-taking after the Nikkei* average's 1,680-point surge over the previous four sessions, *agencies report from Tokyo.*

The Nikkei closed 321.06, or 1.8 per cent, down at 17,740.06, after a day's low of 17,699.72 and high of 18,059.21. Declines outnumbered advances by 751 to 285, while 82 issues were unchanged.

Volume was estimated at 550m shares, down from 564.5m registered on Monday. The Topix index of all first section stocks slipped 15.24 to 1,370.27, while in London the ISE/Nikkei 50 index lost 6.11 *to 1,086.07.*

Traders said the Nikkei's downside was probably limited to 17,500 as sentiment remained buoyant in the wake of the government's fiscal stimulus package. However, they added that selling pressure remained heavy above 18,000.

Mr Hiroyuki Maki, a trader with County NatWest Securities, said that with the Nikkei at 18,000, and price/earnings ratios above 45, "the market *does not look cheap*". With companies cutting their earnings forecasts for the current fiscal year, the ratios could soon exceed 50, he added.

Individuals and dealers dominated trading, with Aids-related shares attracting the most interest. Meiji Milk accounted for roughly 9 per cent of the day's turnover as it advanced Y50 to Y1,110. Mochida Pharmaceutical climbed Y160 to Y3,690.

Other sectors which had risen sharply over the previous two weeks fell on profit-taking. Mitsubishi Estate dropped Y53 to Y957 and Mitsui Real Estate Y40 to Y1,040.

Blue chip electricals were mostly softer, although the latest downward earnings revisions did not have a big effect. Hitachi dipped Y11 to Y786 and Toshiba shed Y18 to Y620.

Takashimaya weakened Y40 to Y1,000 after a newspaper reported that the company will suffer a 48 per cent drop in pre-tax profits in the current fiscal year.

Carmakers lost ground following the domestic car sales data for August that showed a 16.3 per cent fall from a year ago, the sharpest decline since November 1980. Toyota Motor receded Y30 to Y1,420 and Mazda Y15 to Y450.

Roundup

TOKYO'S retreat prompted profit-taking in the Pacific *Basin region.*

TAIWAN finished slightly higher as investors became cautious after the recent rises. The weighted index put on 14.10 at 3,960.45 as turnover decreased to T$25.56bn from Monday's T$29.5bn.

Slight profit-taking was seen but major players and institutions traded actively, encouraging small investors. China Steel, strong in the past two days, relinquished 30 cents to *T$17.50 on profit-taking.*

HONG KONG closed firmer after an early decline, selling orders having dried up by midmorning. The Hang Seng index gained a net 82.97 at 5,711.97 in turnover of HK$2.7bn. The market was closed on Monday.

HSBC Holdings led the actives list, rising HK$2 to HK$56.50 on the back of last week's results.

MANILA fell further in listless trading as PLDT and Philippine National Bank continued to soften in reaction to the steady rise of the peso against the dollar. The composite index shed 9.75 to 1,366.91 in combined turnover of 163.36m pesos, after Monday's 144m.

AUSTRALIA eased in quiet trading dominated by selling of industrial stocks. The All Ordinaries index finished 4.7 off at 1,542.5 in turnover of A$168.2m.

Lend Lease tumbled 30 cents to A$14.00, extending its fall since its disappointing results last week to A$1.90, while Brambles slid 56 cents to A$14.98, a loss of A$1.12 so far this week ahead of its financial results, due tomorrow.

NEW ZEALAND rose slightly in light trading on the first day of spring, the NZSE-40 capital index firming 1.96 to 1,483.88 in turnover of around NZ$14.4m. Fletcher Challenge moved for*ward 4 cents to NZ$2.40 follow*ing late interest from Australian institutions.

Fishing concern Sanford advanced 15 cents to NZ$5.10 on expectations that Sealord, Carter Holt's fishing company, will not now be floated.

SINGAPORE closed easier on thin selling, the Straits Times Industrial index losing 3.08 to 1,375.46 in volume of 28.11m shares, up from 26.38m.

KUALA LUMPUR retreated in the afternoon on profit-taking. The composite index ended 1.23 down at 573.50 after reaching an early high of 579.21.

Volume fell to 31.4m shares from Friday's 51.1m. The market was shut on Monday. Tenaga Nasional was active as 1.5m shares changed hands. It closed steady at M$9.65.

SEOUL consolidated after a two-day rise. The composite index retreated 4.20 to 558.60 in turnover of Won639.6bn, up from Monday's Won428.2bn.

SOUTH AFRICA

A rebound in the financial rand, combined with weakness in London, took equities off their highs. The overall index rose 7 to 3,159 and golds firmed 16 to 954. The industrial index added 20 to 4,074.

EUROPE

Renewed dollar weakness hurts bourses

THE renewed tumble in the dollar hit currency-sensitive bourses yesterday, *writes Our Markets Staff.*

FRANKFURT fell on the dollar, and on a warning from the outgoing president of the Federation of German Industry (BDI), Mr Heinrich Weiss, that Germany was heading for *long-term recession and a* sharp rise in unemployment if wage and budget policies are not changed.

The DAX index lost 22.55, or 1.3 per cent to 1,518.70 as the dollar registered its lowest ever Frankfurt fixing, dropping to DM1.3977 from DM1.4097.

Turnover fell again, from DM4.2bn to DM3.8bn. Dollar stocks, particularly the carmakers, led the declines with Daimler DM10.30 lower at DM617.70, BMW down DM10 to DM499 and Volkswagen off DM9.60 at DM317.50.

Lufthansa rose against the trend, adding another DM3.80 *for a two day gain of DM11.80*, or 12.6 per cent at DM105.80. Unions at the loss-ridden air carrier agreed to a one-year wage freeze on Monday.

PARIS recovered from the day's lows but the mood remained cautious. The CAC-40 ended 10.65 down at 1,674.23, after 1,662.47, in thin turnover of FFr1.15bn.

Building stocks remained weak following last week's poor housing figures. Lafarge dropped FFr7.20 to FFr264 while Saint-Gobain, also depressed by the impact of the weak dollar on its US earnings, fell FFr10.80 to FFr489.20.

News that Baltica, Denmark's biggest insurer, made a loss of DKr991m in the first six months took Suez down by FFr4.10 to FFr224.40. Suez has an indirect stake in Baltica via Victoire.

Total closed FFr1.50 lower at FFr207.30 just before first-half results featured a net profit of FFr1.91bn, down 47 per cent. This fell short of market expectations of FFr2.2bn-FFr2.4bn and dealers expected the shares to open lower today.

Among smaller stocks, Seb fell another FFr14.10 or 3.7 per cent to FFr370 as the market responded badly for the second day to its disappointing interim results.

MILAN hit another low for the year as uncertainty about the French Maastricht referendum dum Maastricht kept investors on the sidelines. The Comit *index fell 5.94 or 1.5 per cent to* 384.99 in turnover estimated at around L50bn on the return of London traders, up from Monday's meagre L35.7bn.

Montedison, whose chairman Mr Giuseppe Garofano was due to be questioned by a magistrate later in the day over an alleged payment to a political party, lost L20 to L1,101.

Fiat lost L77 to L3,942 and Mediobanca by L300 to L10,100.

ZURICH eased, the SMI index closing 4.3 lower at 1,747.3, but company news took some shares higher: Alusuisse rose SFr2 to SFr404 as the *diversified metals company* forecast a 20 to 40 per cent rise in group net profits this year; Oerlikon added SFr3 to SFr449 on a turnround into profit, and Swissair put on SFr10 to SFr560 as it said that income had outpaced costs in July.

STOCKHOLM fell across the board in thin trading as high domestic interest rates and a poor performance in major markets abroad dragged prices down. The Affärsvärlden General index fell 21.1 or 2.7 per cent to 751.6 in turnover of SKr342m after SKr260m.

Volvo B shares fell SKr11 to SKr257 on news of a SKr2bn cost-cutting programme for its truck division, which was interpreted negatively by the market.

COPENHAGEN fell 2.4 per *cent*, the KFX index shedding 1.88 to a new low of 74.88 as Baltica fell DKr20 to DKr360.

Mr Michael Douglas of Bikuben said that the index was *pushed down an hour before* noon, ahead of the expiry of futures contracts; it stabilised thereafter, but weakened again in the last half-hour of the day.

OSLO continued its recent plunge as the deepening crisis in Norway's financial sector dampened investor interest. The all-share index was down 9.77 or 3.1 per cent to 309.12 in thin turnover of NKr156.6m.

HELSINKI, a byword for losses this year, managed to fall on profit-taking, the fall of 11.0, or 1.9 per cent to 561.9 wiping nearly all the Hex index had recovered over the previous three days.

MADRID closed modestly higher on a batch of steady, or better first half earnings results, Telefonica, and Dragados among them. The general index closed 1.40 higher at 206.37.

AMSTERDAM's CBS Tendency index fell 0.8 to 109.1, weighed down by the weak dol*lar and firm domestic interest* rates.

ISTANBUL was volatile on reports, later denied, that the yield on nine-month treasury bills would fall by six percentage points. The index rose to a high of 4,234.46 but later fell on profit-taking to end 20.8 up at 4,168.72.

TEL AVIV's blue chip index gained 1.77, or 1.1 per cent to 158.12 in response to positive half-year corporate reports.

FT-SE Eurotrack 100 - Sep 1

Hourly changes

Open	10.30am	11 am	12 pm	1 pm	2 pm	3 pm	close
1010.42	1009.99	1009.52	1009.19	1008.51	1007.34	1007.93	1007.79

Day's High 1010.95 — Day's Low 1005.96

Aug 28	Aug 27	Aug 26	Aug 25	Aug 24
1013.54	1017.14	997.98	993.01	1010.52

Base value 1000 (26/10/90).

FT-ACTUARIES WORLD INDICES

Jointly compiled by The Financial Times Limited, Goldman, Sachs & Co., and County NatWest/Wood Mackenzie in conjunction with the Institute of Actuaries and the Faculty of Actuaries

NATIONAL AND REGIONAL MARKETS	TUESDAY SEPTEMBER 1 1992								MONDAY AUGUST 31 1992					DOLLAR INDEX		
Figures in parentheses show number of lines of stock	US Dollar Index	Day's Change %	Pound Sterling Index	Yen Index	DM Index	Local Currency Index	Local % chg on day	Gross Div Yield	US Dollar Index	Pound Sterling Index	Yen Index	DM Index	Local Currency Index	1992 High	1992 Low	Year ago (approx)
Australia (68)	129.72	+0.1	96.30	100.77	93.98	120.36	−0.4	4.55	129.64	96.64	100.78	95.02	120.89	153.66	126.78	148.02
Austria (19)	152.35	−0.3	113.10	118.36	110.37	110.70	−0.6	2.64	152.80	113.90	118.79	111.99	111.36	186.70	139.27	177.56
Belgium (42)	143.10	−0.1	106.24	111.16	103.67	101.46	−0.8	6.06	143.29	106.81	111.38	105.02	102.27	152.27	135.87	129.23
Canada (114)	126.30	+0.1	93.76	98.11	91.49	109.19	+0.1	3.18	126.11	94.00	98.03	92.42	109.12	142.12	124.32	139.78
Denmark (35)	222.12	−1.5	164.90	172.56	160.92	163.21	−1.9	1.74	225.53	168.11	175.33	165.29	166.30	273.94	222.12	252.57
Finland (15)	61.47	+1.0	45.64	47.76	44.54	49.71	+0.3	2.84	60.89	45.38	47.33	44.62	49.55	89.80	59.93	95.30
France (102)	158.02	+0.1	117.32	122.75	114.47	117.74	−0.5	3.82	157.87	117.68	122.72	115.70	118.37	168.75	148.06	137.82
Germany (64)	119.46	+0.5	88.69	92.82	86.54	86.54	−0.6	2.64	118.82	88.57	92.38	87.08	87.08	129.69	114.42	109.22
Hong Kong (53)	234.30	+1.4	173.94	182.02	169.75	232.48	+1.4	3.62	231.13	172.28	179.67	169.40	229.33	259.55	178.38	187.45
Ireland (16)	159.94	+0.3	118.74	124.25	115.87	119.02	−0.3	4.44	159.49	118.88	123.98	116.89	118.32	173.71	151.78	156.61
Italy (78)	62.84	−1.4	46.65	48.82	45.53	49.98	−1.9	4.15	63.71	47.49	49.52	46.69	50.97	80.86	61.30	72.25
Japan (473)	*111.42*	*−1.1*	*82.72*	*86.56*	*80.73*	*86.56*	*−1.1*	*0.98*	*112.63*	*83.95*	*87.55*	*82.55*	*87.55*	*140.95*	*87.27*	*126.69*
Malaysia (69)	234.54	+0.1	174.13	182.20	169.91	225.06	+0.1	2.81	234.25	174.61	182.09	171.68	224.85	250.47	212.49	206.32
Mexico (18)	1302.36	−0.3	966.88	1011.76	943.53	4377.88	−0.5	1.37	1306.86	974.13	1015.93	957.80	4401.24	1789.77	1259.94	1218.77
Netherland (25)	166.77	−0.2	123.81	129.56	120.82	119.58	−0.7	4.69	167.03	124.50	129.84	122.42	120.44	167.29	147.88	138.87
New Zealand (14)	42.72	+0.1	31.72	33.19	30.95	41.98	−0.1	5.41	42.68	31.81	33.18	31.28	42.03	48.52	41.90	46.49
Norway (23)	145.41	−3.9	107.96	112.97	105.35	109.00	−4.4	2.31	151.31	112.79	117.63	110.90	113.99	192.95	136.40	199.99
Singapore (38)	193.52	−1.0	143.67	150.34	140.20	142.28	−1.2	2.33	195.44	145.68	151.93	143.24	143.95	229.63	180.71	196.11
South Africa (61)	190.13	+1.1	141.16	147.70	137.74	156.67	+0.7	3.24	188.08	140.19	146.21	137.84	155.57	263.60	186.01	239.20
Spain (49)	139.06	+1.4	103.24	108.04	100.75	95.40	+0.9	6.16	137.15	102.23	106.62	100.52	94.55	161.72	133.79	152.12
Sweden (30)	180.21	−1.8	133.79	140.00	130.56	138.13	−2.2	3.02	183.55	136.81	142.69	134.52	139.19	200.28	171.48	190.81
Switzerland (62)	115.14	+0.7	85.48	89.46	83.43	88.48	−0.2	2.42	114.31	85.21	88.87	83.79	88.68	115.14	95.99	92.70
United Kingdom (228)	181.22	−0.2	134.54	140.77	131.27	134.54	−0.6	5.46	181.65	135.40	141.20	133.12	135.40	200.07	165.85	180.91
USA (522)	169.44	+0.5	125.80	131.64	122.76	169.44	+0.5	3.00	168.63	125.70	131.10	123.60	168.63	173.10	160.92	159.25
Europe (788)	147.00	−0.1	109.13	114.20	106.50	108.34	−0.7	4.40	147.09	109.64	114.34	107.80	109.07	156.88	139.31	140.73
Nordic (103)	164.46	−1.8	122.10	127.76	119.15	118.45	−2.2	2.54	167.55	124.89	130.25	122.80	121.14	188.52	159.53	186.37
Pacific Basin (715)	115.67	−0.9	85.88	89.86	83.80	91.63	−1.0	1.34	116.70	86.98	90.72	85.53	92.52	141.97	93.70	128.30
Euro – Pacific (1503)	128.35	−0.5	95.29	99.70	92.98	98.42	−0.8	2.75	128.99	96.15	100.27	94.53	99.24	145.21	113.80	133.55
North America (636)	166.74	+0.5	123.79	129.55	120.82	165.34	+0.5	3.01	165.97	123.71	129.03	121.66	164.58	170.31	158.70	157.97
Europe Ex. UK (560)	126.13	+0.1	93.64	98.01	91.40	93.24	−0.7	3.64	126.04	93.95	98.00	92.39	93.89	132.98	121.81	117.07
Pacific Ex. Japan (242)	*157.36*	*+0.5*	*116.83*	*122.27*	*114.02*	*142.20*	*+0.3*	*3.81*	*156.58*	*116.71*	*121.74*	*114.77*	*141.78*	*175.31*	*149.00*	*144.36*
World Ex. US (1696)	129.62	−0.5	96.23	100.71	93.91	100.47	−0.8	2.76	130.21	97.06	101.23	95.43	101.24	146.91	116.18	135.53
World Ex. UK (1990)	138.37	−0.1	102.72	107.50	100.25	120.37	−0.2	2.54	138.45	103.20	107.63	101.48	120.65	150.58	127.21	138.87
World Ex. So. Af. (2157)	141.82	−0.1	105.29	110.19	102.76	121.29	−0.3	2.85	141.96	105.81	110.36	104.05	121.63	153.05	130.04	141.88
World Ex. Japan (1745)	159.63	+0.3	118.51	124.03	115.67	141.77	+0.0	3.54	159.18	118.65	123.76	116.68	141.71	165.40	153.20	152.26
The World Index (2218)	142.08	−0.1	105.48	110.38	102.94	121.63	−0.3	2.86	142.19	105.99	110.54	104.22	121.96	153.70	130.66	142.52

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Amendments to indices for August 31 applied to Austria, France, Sweden, Switzerland and related regional indices.

Chips off the eastern bloc: new airlines learn to fly the capitalist way Page 10

FINANCIAL TIMES SURVEY

AEROSPACE

The EFA affair: Europe's absent jet will be the talk of Farnborough Page 12

SECTION III

Wednesday September 2 1992

Aerospace faces its worst cyclical down-turn since World War Two. As the industry prepares to go on show at Farnborough, parts of its military and commercial sectors are bracing themselves for some radical reshaping, writes **Paul Betts**

Fasten your safety belts

TO MAKE a small fortune you should start with a big one, says Mr Jean Pierson, the chairman of the European Airbus consortium.

This old adage from the farming industry is becoming increasingly apposite for aerospace which during the past two years has faced the worst cyclical downturn in its post war history.

As the industry prepares to gather in force for its regular Farnborough showcase next week, it is facing a series of severe problems both in the military and commercial sectors which are likely to lead to a radical reshaping of some significant parts of the business.

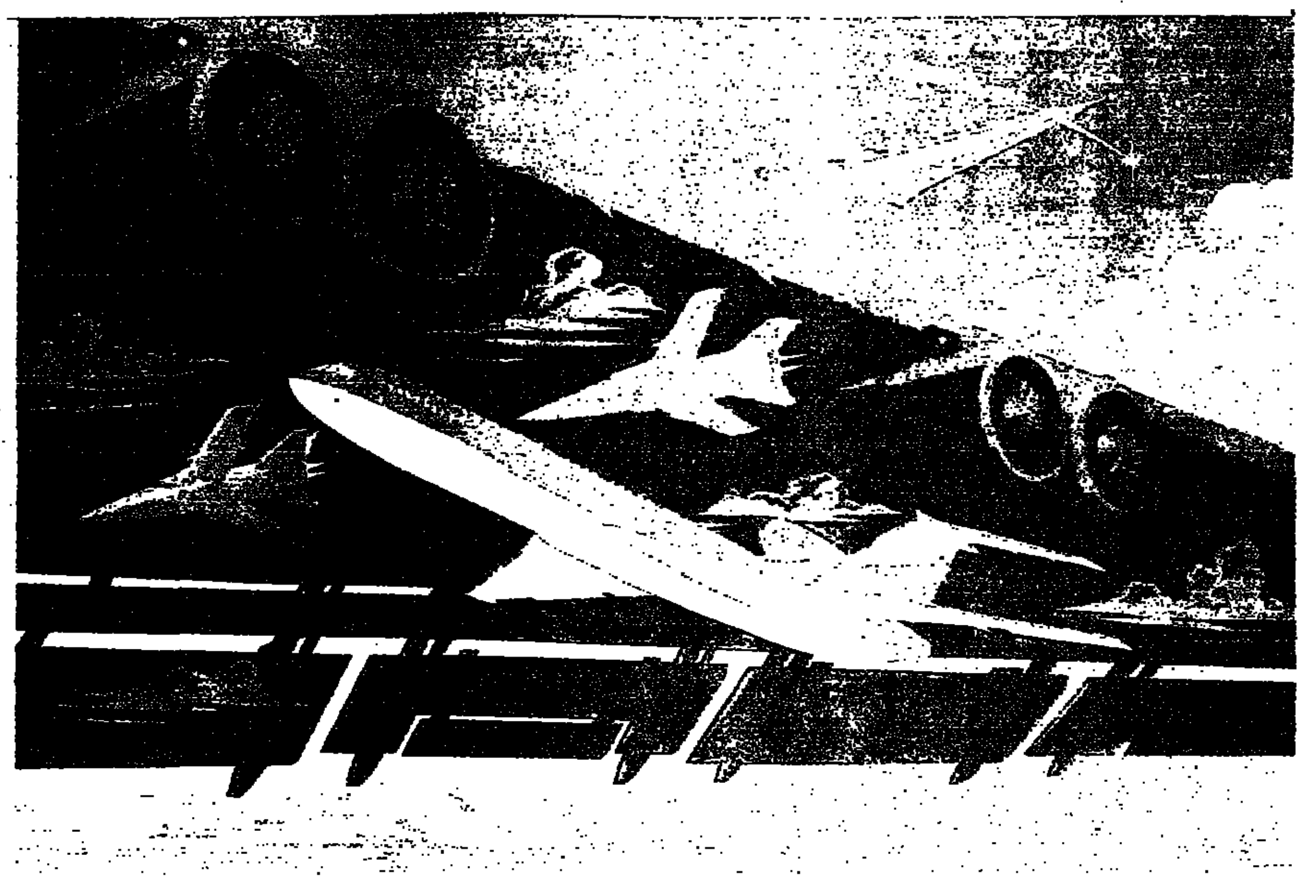
This process has already begun. The last few months have seen Deutsche Aerospace negotiate a partnership with Fokker of the Netherlands which is expected to lead to a broad restructuring of the European regional aircraft industry. McDonnell Douglas of the US has been striving to forge an alliance with aerospace manufacturers in the Far East to form a new international commercial airliner partnership. In the UK, British Aerospace is in the throes of a sweeping restructuring aimed at refocusing the company around its core military aircraft and large civil airliner activities in the European Airbus partnership.

Mergers, partnerships and consolidation have also accelerated in the airline business still struggling to recover from the air travel slump caused by the combined effects of the Gulf crisis and the recession in many western economies. The most spectacular recent deal involved the proposal by British Airways to buy this summer a stake in USAir, the sixth largest US carrier, in an effort to form a global airline. Other carriers have also been scrambling to negotiate partnerships. Air France acquired this year stakes in Sabena of Belgium and CSA, the Czechoslovak national airline.

The military side of aerospace has also been forced to scale back its operations to adapt to the reductions in government spending in the new post Cold War defence climate. This has led to large scale job cuts and attempts by manufacturers to diversify increasingly in commercial activities to offset the loss of defence business.

Even though the civil market remains soft, the contraction in the defence industry is expected to continue spawning new ventures in commercial aerospace. In turn, this is bound to put even greater pressure on the excess capacity already evident in the commercial sector.

"It seems clear to me that the growing problem of excess capacity, and defence conversion, will have a huge impact on our industry over the next five to ten years," says Mr Larry Clarkson, a vice president of Boeing, the world's biggest manufacturer of commercial aircraft.



Boeing has been cutting back production as have Airbus and McDonnell Douglas. But even with 55 per cent of the world commercial airliner market and an order backlog worth \$97bn, Boeing has also been forced to change the way it does business. The Seattle-based company is adopting a much more open stance towards the outside world and is actively encouraging airlines, suppliers and subcontractors to participate in the design of its latest airliner, the 777 widebody twin engine jet.

It is also openly talking for the first time of forging close ties, including equity partnerships, with other companies. It has been forced to do so by the huge investments required to launch new programmes in a market where the risks have kept steadily rising. "I don't know where our next partners will come from but I am not ruling out partnerships with any other company in the world," Mr Frank Shrontz, Boeing's chairman, said at the company's annual meeting this year.

Airbus, which has now become Boeing's principal competitor building up a 26 per cent share of the world market during the last 20 years, is also anxious to expand international collaboration as a response to the increasing challenges and complexities in designing, funding and developing new aircraft. "At the same time as alliances are developing between American and Asian interests, Airbus is exploring, sounding out, talking with new potential partners wherever they may be, and why not the US," Mr Pierson said in New York this summer.

The problem for the industry is that there is a fundamental difference between the current downturn and previous cycles, which have tended to occur at regular 10-year intervals. For the first time, the prolonged recession in civil aviation has coincided with deep cutbacks in defence.

In the past, the industry was able to rely on its military activities to tide it through a cyclical recession in the commercial sector. This has not been the case during the last two years. Instead, the industry has had to restructure simultaneously both sides of its business.

The end of the Cold War has not only shrunk the defence market but has also changed the emphasis on the types and scale of military projects either already in progress or envisaged. In the past, the industry's activities were dominated by projects designed to address a potential conflict between super-power blocks.

But the political upheavals of the past two years, with the collapse of the Berlin Wall and the disintegration of the former Soviet Union, have altered that philosophy. The emphasis has now turned more in favour of lighter, cheaper and more tactical weapon systems rather than the former dominance of long range strategic military aircraft or missiles.

However, the disappearance of the risk of a super-power confrontation has now highlighted the fact that in many other regions of the world there is still the possibility of local conflagrations requiring weapons more suited to that threat. To respond to such threats, many Air Forces are increasingly looking for lighter and more operationally flexible systems.

The UK has argued vigorously that this situation also applies to the £20bn European Fighter Aircraft (EFA), which is fighting a political battle for survival.

The EFA issue is bound to be one of the dominating themes at next week's Farnborough air show. The UK is expected to use the occasion to lobby hard Germany, Spain and Italy to continue participating in the production phase of the controversial programme.

Germany provoked the EFA crisis when it announced this summer it did not intend go ahead with production of the new fighter, although it would continue to participate in the project's development. Both Spain and Italy have also expressed concerns about EFA's costs and are still, at this stage, by no means committed to production.

The collapse of the EFA programme would be a huge blow for the European aerospace industry. It would have repercussions on jobs and the future aerospace technological capabilities of the four EFA countries, and could also have implications for France which is developing its own advanced combat aircraft, the Rafale. A decision to scrap EFA could lead to a reappraisal of the Rafale by the French administration in Paris, some French aerospace officials fear.

The industry is worried that the possibility of EFA and other military programmes being dropped or downgraded could have a long term effect on commercial aerospace activities, which are still regarded as having good long term growth prospects. These concerns largely stem from the fact that advanced technology in new materials and production techniques developed for military programmes find their way in many cases into commercial programmes.

These techniques are likely to become all the more important in the future as the industry starts to turn its attention to the next generation of supersonic airliners and the development of 600-800 seater super jumbos.

Demand for super jumbos and a second generation Concorde is expected to emerge around the turn of the century.

IN THIS SURVEY

Colour illustration: Ivan Allen

Commercial jet makers see a recovery after the turmoil, writes **Paul Betts**

Hopeful signs on the radar screen

THE world's commercial aircraft industry is confronted with a dichotomy: in the short term it continues to face considerable turmoil but in the longer term it remains optimistic that demand for airliners will recover and growth will be strong.

Historically, the industry has always been highly cyclical. But the latest down cycle has been particularly fierce and caused by a unique set of circumstances.

It was preceded by a record breaking binge of new aircraft orders by airlines in 1987, 1988 and 1989. A total of $90bn worth of new jet orders were booked by western manufacturers in 1989 alone. Even after a drop in the number of bookings last year, the total industry backlog of orders at the end of 1991 amounted to $191bn and 3,158 aircraft. Such a trend was clearly unsustainable.

It was followed by economic recession in North America and several parts of Europe which had an inevitable impact on airline profits and new aircraft orders. The situation was exacerbated by the Gulf crisis last year and its profound impact on air travel. In the middle of all this, the end of the Cold War provoked a decline in the defence aerospace market forcing companies to rely increasingly on the commercial side of the business.

All this has created huge uncertainty in the jetliner market. Financially pressed airlines have deferred orders and significantly cut capital spending. Some 725 aircraft are lying idle in the Arizona desert. Aircraft manufacturers have been forced to adapt to this new market situation by reducing production of some of their jet programmes and cutting jobs. Even on the most optimistic assumptions of longer term growth, manufacturers now have more than sufficient capacity to meet future demand, says Mr Larry Clarkson, vice president of planning and international development at Boeing, the world's biggest manufacturer of commercial jets.

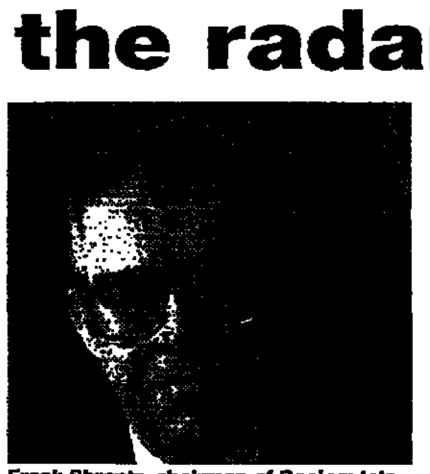
"Air travel may experience much stronger growth than we now project, but our best guess today is that there is no forseeable shortfall to 2010 in the world's ability to manufacture commercial aircraft," he noted recently. "The problem of excess capacity is even more troubling when you consider what's happening on the military side of aerospace...sophisticated industries are in place and millions of jobs are at stake," he added.

The contraction in the defence industry is expected to spawn new ventures in commercial aerospace even though the market remains soft. "It seems clear that the growing problem of excess capacity and defence conversion will have a huge impact on our industry over the next five to ten years," Mr Clarkson said. "Within the next decade, we will probably see a change in both the composition of the airframe manufacturers and the types of relationships they have with suppliers," he forecast.

One of the biggest problems facing the industry is the financing of new aircraft orders. In its latest review of the world airline market, Boeing says that airlines will have to turn increasingly to international capital markets to finance future aircraft purchases.

More innovative financing will be required to fund future airline jet requirements, especially since Japan, a significant source of aircraft financing, has become reluctant to continue investing heavily in aircraft. Indeed, the contribution of Japanese banks, trading companies and equity investors in aircraft leases is expected to drop from between 55-65 per cent of total commercial aircraft financing to barely 8-12 per cent over the next few years, according to Boeing.

Jean Pierson, chairman of Airbus Industrie: confident outlook



Frank Shrontz, chairman of Boeing: lots of capacity to meet future demand

Despite all these difficulties, all three leading commercial aircraft manufacturers – Boeing, McDonnell Douglas and the European Airbus consortium – remain confident of the longer term outlook for the industry with a recovery of world air travel requiring some $850bn worth of new aircraft between now and 2010.

"We estimate that to meet the demand for air travel some 12,000 new airplanes will have to be delivered between now and 2010, at an average rate of 500-600 aircraft per year," says Mr Jean Pierson, the Airbus chairman. But this market will be strongly dependent on airlines being willing to replace part of their existing fleets. Mr Pierson expects that of the 12,000 new aircraft deliveries between now and 2010, about 7,000 will involve replacement of old aircraft.

After world air travel declined last year for the first time in the history of the jet aircraft, the manufacturers are now expecting it to grow by between 4-5.5 per cent a year to the turn of the century. This growth coupled with congestion problems on the ground at airports and in the air because of inadequate air traffic control systems is expected to boost demand especially for larger widebody aircraft.

Boeing is already well into the development of its new widebody twin engine airliner, the 777, while the new Airbus A340 four engine long range aircraft is due to enter service next year. While orders for smaller narrowbody aircraft have fallen sharply during the last year, demand has been more sustained for larger aircraft.

All three leading manufacturers are also studying plans to develop ultra-large aircraft capable of transporting 600 to 800 passengers to enter into airline service early in the next century. Up to now, the jumbo market has been dominated by Boeing with the 747 series of airliners. But both Airbus and McDonnell Douglas are planning to challenge Boeing in this niche with new jumbos.

"I believe the design and development of these giant aircraft represents the next great challenge for commercial aviation," Mr Adam Brown, the planning director of Airbus, told a aviation conference earlier this year.

Boeing is studing the possibility of stretching its 747 or building an entirely new extra large aircraft. McDonnell Douglas has already announced its intention to develop a double-decker four engine jumbo, the MD-12, if it can find partners to invest in the project and sufficient airline launch customers. Airbus has also been talking to airlines, especially in the Asia-Pacific region, about a super jumbo.

All three manufacturers agree that the costs of developing a new generation of large aircraft are so high that it is bound to involve widespread international cooperation. All three have been seeking to interest Asian aerospace companies to participate in the eventual development of ultra large airliner programmes because the biggest market for such aircraft is expected to be in the Asia-Pacific region, where air traffic is forecast to continue showing above average growth.

McDonnell Douglas has been striving to negotiate an equity investment agreement with Taiwan Aerospace, while Boeing and Airbus have been discussing cooperation with the three Japanese manufacturers: Kawasaki Heavy Industries, Fuji Heavy Industries and Mitsubishi Heavy Industries.

The manufacturers, however, are also looking at the smaller end of the airliner market. Boeing is expected to start later this year consulting airlines on a new design of its 737 twin engine narrowbody jets which is expected to involve a new wing and new engines. Airbus is studing the possibility of launching a smaller 125-seat version of its A320 narrowbody aircraft called the A319. McDonnell Douglas also has plans to develop a new medium sized airliner to expand its family of commercial airliners.

But their long term expectations remain firmly fixed on the large airliner market. All three are predicting that the average size of jets operated by big international airlines will rise from around 174 seats to 241 seats over the next 20 years. In the Asia-Pacific region, this is likely to be even higher, to around 334 seats. In turn, this is expected to require the delivery of substantial numbers of aircraft very much larger than anything flying today.

Short-haul jets are worst hit, writes **Paul Betts**

Too many choices

THE REGIONAL and commuter aircraft industry is undergoing a significant shake-up. Of all commercial aircraft markets, it has been one of the worst hit by the recession, the slowdown in air travel, and the financial troubles of smaller airlines – the principal customers for regional jets and turbopropeller commuter aircraft.

The slump has highlighted the fundamental structural problem of the industry. Simply put, it is suffering from over-capacity with too many manufacturers offering too many competing products.

For smaller regional jet-makers, the problem has been exacerbated by the presence of the three large commercial aircraft manufacturers at the upper end of the market.

Boeing and McDonnell Douglas, of the US, offer 100-seat versions of their twin-engine narrow-body aircraft, the 737 and the MD80/90. The European Airbus consortium is now studying the possibility of entering the 120-seater jet market for the first time, by launching a new smaller derivative of its A320 twinjet called the A319.

All this has led to an acceleration in efforts to rationalise the regional airliner industry, especially in Europe. Some consolidation has already begun. Bombardier of Canada absorbed Short Brothers of Northern Ireland and, more recently, de Havilland of Canada, after a joint bid for the Canadian group by Aérospatiale, the French aerospace company, and Alenia of Italy, had been blocked by the European Commission. Aérospatiale and Alenia have also pooled their resources to form the ATR regional turbopropeller aircraft consortium.

But the current focus is on Fokker, the Dutch aircraft manufacturer, which finally agreed this summer to a merger with Deutsche Aerospace (Dasa), the aerospace arm of Germany's Daimler-Benz group.

Dasa will acquire control of Fokker through a 51 per cent stake in a joint holding company to form the basis of a new partnership in the regional airliner sector. Fokker is expected to provide its marketing expertise, and Dasa the necessary financial backing to support future regional airliner programmes. Fokker has been working on plans to develop a smaller 70-seat version of its Fokker 100 jet and eventually a larger 120- to 130-seat derivative.

The agreement between Dasa and Fokker is also expected to set the stage for a broad realignment of the European regional aircraft industry. Dasa has had its eyes set on the regional jet business for the past two years, as part of its long-term strategy to re-establish the German aerospace industry in a leading position in commercial aircraft.

To this end, it formed last year a partnership with Aérospatiale and Alenia to develop a new family of regional jets as well as to co-ordinate the three companies' products and marketing networks in the commuter and regional aircraft sector. The deal with Fokker, however, has clearly placed a large question mark on the future of the earlier partnership agreed between Dasa, Aérospatiale and Alenia.

But the Fokker transaction could ultimately lead to Aérospatiale and Alenia joining the new German-Dutch partnership to form a broader European regional aircraft consortium creating a similar sort of European consortium for regional aircraft as the European Airbus large airliner manufacturing consortium. This is bound to put additional pressure on other manufacturers, especially British Aerospace (BAe), to speed up the search for partners or perhaps consider joining forces with the proposed new European regional aircraft consortium.

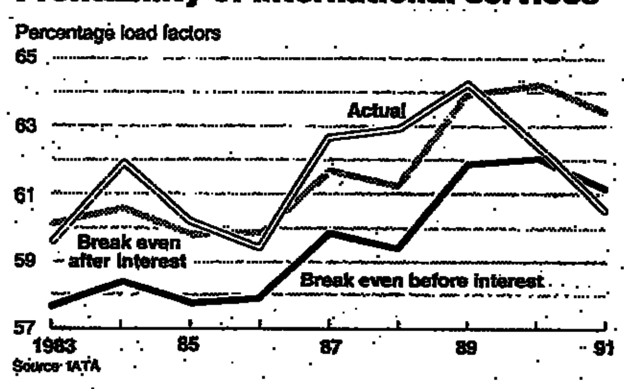
Tackling the problems of its loss-making regional aircraft activities has become one of the top priorities of BAe's restructuring strategy. The UK group has been attempting to negotiate a partnership with Japanese aerospace companies in its regional aircraft business, and has also been talking to Taiwan Aerospace and other manufacturers. The industry believes BAe could ultimately withdraw from this business.

But while the industry is scrambling to restructure itself, it remains confident of the longer-term growth prospects of the commuter and regional jet market. Apart from the sustained requirement for smaller jets and turbopropeller aircraft from developing countries, especially in the Asia-Pacific region, demand is expected to increase in industrialised countries as the airline industry continues to develop hub and spoke route networks.

Airlines will thus require small regional and feeder aircraft operating at high frequency to feed passengers to the major domestic and international routes at their hub airports. Since deregulation 12 years ago, this has been the case in the US, where a few strong carriers now dominate the market, operating dense nationwide networks with frequent services using smaller jets and commuter aircraft.

With the European Commission's third stage of airline liberalisation starting next year, large European carriers are expected to intensify efforts to open new hubs in other EC member states. This is likely to provide a strong stimulus for the commuter and regional aircraft market.

Profitability of international services



Airlines head for third year of losses

Price-cutting war becomes fiercer

THE AIRLINE industry is still suffering from the extended hangover of the general economic recession and the air travel slump caused by the Gulf conflict last year.

Although traffic showed signs of recovery during the first half of this year, capacity is still outstripping passenger demand; and airlines are engaged in a fierce fares discounting war, to maintain market share in anticipation of an eventual rebound in business.

The International Air Transport Association (IATA) – the industry's trade organisation, grouping more than 200 international airlines – has warned that, for the third consecutive year, airlines are likely to report a big loss on international scheduled services in 1992.

The latest estimates put the 1992 loss at around $2bn. This is not as high as the record $4bn loss reported by the industry in 1991, the worst year in the history of aviation, which followed a loss of $2.7bn in 1990; but it is still a disappointing and worrying performance.

"The financial recovery will be crucial to the ability of the airlines to offer better services, more tailored to consumer needs," warns Mr Gunter Eser, IATA's outgoing director general. "It is not a case of going from famine to feast. It would be good to see the airlines achieving merely the sort of return on their money invested that anybody could get by putting it in the post office," he adds.

After falling by 3 per cent last year – the first decline in air traffic since the introduction of the jet aircraft – passenger traffic has increased so far this year by 8 per cent and cargo by 4 per cent, compared with 1990, the year before the slump provoked by the Gulf conflict. But this traffic growth has not matched the rise in overall capacity, which is 12 per cent higher than in 1990.

In a nutshell, the fundamental problem of the industry is that too many aircraft are flying with empty seats. The response of most airlines to the slow recovery in traffic has been to cut costs in an effort to improve productivity. Nearly 50,000 jobs were lost in the industry in 1991 as a result of restructuring. But these moves have not been sufficient to offset the pressures of overcapacity in the market.

The financial problems of airlines, especially of the weaker carriers, coupled with increasing liberalisation and deregulation in the industry, are now expected to accelerate the general trend towards greater concentration in the industry, as well as the possibility of more airline bankruptcies.

The last 18 months have seen a number of airlines disappear, including famous names like Pan Am and Eastern, and younger ones like Air Europe. Several US airlines are struggling under the protection of the US bankruptcy laws. Others are scrambling to forge partnership and strategic alliances with other airlines, to build up their critical mass and compete in an increasingly global airline market.

Even a profitable airline such as British Airways has been anxious to negotiate international partnerships to strengthen its overall competitive position. BA , which has been actively looking for allies in Europe, the US and the Asia Pacific region, successfully forged this summer a transatlantic alliance with USAir, the sixth largest US carrier. BA will be investing $750m in USAir to buy a 21 per cent voting stake as well as an equity stake of up to 44 per cent in the American carrier. BA had earlier unsuccessfully attempted to negotiate a merger with KLM Royal Dutch Airlines. It has also indicated it was interested in taking a stake in Qantas Airways, the Australian carrier.

After more than 10 years of deregulation in the US, the American industry is already heavily concentrated around a handful of giant carriers, including, among the three largest, American Airlines, Delta and United Airlines. These carriers have now set their eyes firmly on expansion into the European market, which will be opened *up to* much greater competition next year following the recent approval of the European Commission's third package of air transport liberalisation measures.

The big US carriers have their eyes firmly set on expansion into the European market

To respond to the challenge of giant US carriers – as well as large airlines from the Asia Pacific region, which has continued to enjoy above average traffic growth – the big European carriers believe it will be necessary for them to grow even bigger.

"At present, there are at least 60 airlines in Europe that matter: that's 40 too many," says Mr Bernard Attali, the chairman of the Air France group, which in terms of annual turnover is Europe's biggest carrier.

But consolidation is increasingly worrying European air transport regulators, who fear that this risks undermining the competition they are seeking to encourage through liberalisation. But liberalisation in Europe faces other obstacles. The two biggest are congestion in the skies, because of inadequate air traffic control systems; and crowded airports. Both threaten to squeeze out new entrants into the newly liberalised European air transport market.

European governments are addressing the problem of air traffic control by seeking to harmonise and modernise the different systems. But the process is likely to take several years. In the meantime, air traffic control in Europe remains extremely fragile. "The situation is critical for our industry," says Mr Attali. "You can't expect competition to work as long as there is congestion," he adds.

Crowded airports are another significant problem. The EC is attempting to draw up regulations to ensure that new entrants can secure take-off and landing slots at congested European airports like London Heathrow or Frankfurt. But most EC member states are objecting to such a system, which would include a proposal to confiscate slots from established carriers to hand them over to new entrants.

The difficult financial situation of airlines and traffic growth artificially constrained by insufficient or badly used infrastructure could deprive the consumer of the benefits of liberalisation in Europe, the industry warns.

"We are heading for a formidable battle," Mr Attali says. "Deregulation in the EC will give consumers a good short-term deal with lower fares, but in the longer term it *could have perverse effects,* as it has had in the US."

Already the gap between low discounted fares and business or normal fares has widened. Businessmen are becoming increasingly frustrated by the high fares they pay to subsidise the discount business.

"Fed up with living in crowded skies and airports, the business traveller will one day say enough is enough, and will try to cut back on air travel," says one international airline executive.

A decline in business travel would have severe implications for the industry. Although businessmen account for only 20 per cent of all air travel, they provide between 50-60 per cent of all airline revenues, according to IATA estimates.

After three terrible years, the industry is clearly hoping that there will eventually be a sharp recovery in traffic, as has been the case after previous down cycles. But it can no longer rely on recovery alone to resolve all its difficulties.

"If airlines want to survive in the longer term, they must behave like entrepreneurs and like any other industry, and adapt capacity to match demand," argues Mr Eser.

As businesses, the airlines can no longer continue defying all the laws of gravity.

Paul Betts

David White on the consequences of the peace

Complex but real

THE PEACE dividend, that overworked cliché, has somehow lost its optimistic connotations.

The expression first gained currency in the US at the close of the Vietnam war, when hopes were raised that money previously poured into the conflict could be redirected into new social programmes.

In the aftermath of the Cold War, it has come to be used ironically by the sectors that have suffered the negative effects of defence cutbacks. Nobody seems conscious of having received a peace dividend. But it is certainly being paid. General John Galvin, the recently-retired supreme Nato commander in Europe, reckons it will add up to more than $500bn by 1997 – the value of what the 16 Nato allies will have refrained from buying or saved on their military forces.

Worldwide, defence expenditure fell last year for the third year running, according to estimates by the Stockholm International Peace Research Institute (SIPRI). Some industrialists, including Mr John Weston, chairman of British Aersopace's defence division, foresee an end to the decline in the mid-1990s, and an increase after that.

But even if the outlook for arms manufacturers is not totally gloomy, things are likely to get worse before they get better. Defence spending is like an ocean liner when it come to slowing it down.

Sharp revisions of government spending plans have become the norm throughout the industrialised world, including countries such as France which have been relatively conservative about their defence outlays.

In the US, the $281bn requested by the Pentagon for the fiscal year beginning in October would be a 4.5 per cent drop in real terms.

Plans up to 1997 have been revised downwards by $50bn. This has involved halting 10 major equipment programmes including the B-2 stealth bomber, of which only 20 are now due to be built, the Seawolf nuclear-powered submarine, which is being stopped at one boat instead of the original plan for 36, and the Comanche scout helicopter, which is to remain at the prototype stage.

US spending plans, which still provide for a slight annual increase in current dollars from the 1994 fiscal year onwards, will continue to come under heavy pressure.

The UK has so far managed its Options for Change review without major cancellations but faces a continuing squeeze on defence resources. After a 10 per cent decline in real-terms spending in the second half of the 1980s, current plans are for a further gradual drop over the next three years.

A report published just before the April general election by the London-based Centre for Defence Studies estimated that real defence expenditure, on current trends, would be 20 per cent lower by the year 2000 than it was in 1990 – a level of about £17bn a year at today's prices. Even with the modest reductions envisaged, the future of some ongoing programmes might have to be reviewed, it said. Any deeper cuts in the budget "could demand a major reappraisal of equipment needs".

Increasingly dependent on exports to offset reductions in their home markets, US and European manufacturers find themselves in head-on collision in the growth markets of the Middle East and Asia. In antithesis to the industrialised west, the Asia-Pacific region has become the prime area of growth in arms expenditure, but suppliers face increasing competition from Asian countries themselves, including South Korea and Japan.

Elsewhere in the developing world, export prospects are overshadowed by financial problems, limited requirements for high-technology equipment, inroads by suppliers such as China and Brazil, and the large amount of second-hand Russian and other weapons on offer. Figures from SIPRI show a 25 per cent drop last year in the global value of trade in major conventional weapons, to $22bn. Significantly, US exporters took 51 per cent of the total. Four years previously the US share had been 30 per cent.

The competition for developing-world markets appears unlikely to be greatly affected by the initiatives undertaken in the wake of last year's Gulf conflict to discuss restraints on arms sales, particularly to the Middle East. The US, Russia, Britain, France and China, the five permanent members of the UN Security Council, which have held a series of talks on possible curbs, are also the countries which control four-fifths of the market. A global UN register of transactions, initially proposed by Britain, is due to start next year, but there is little sign of willingness among any of the main exporting nations to forego sales vital for sustaining their defence industries.

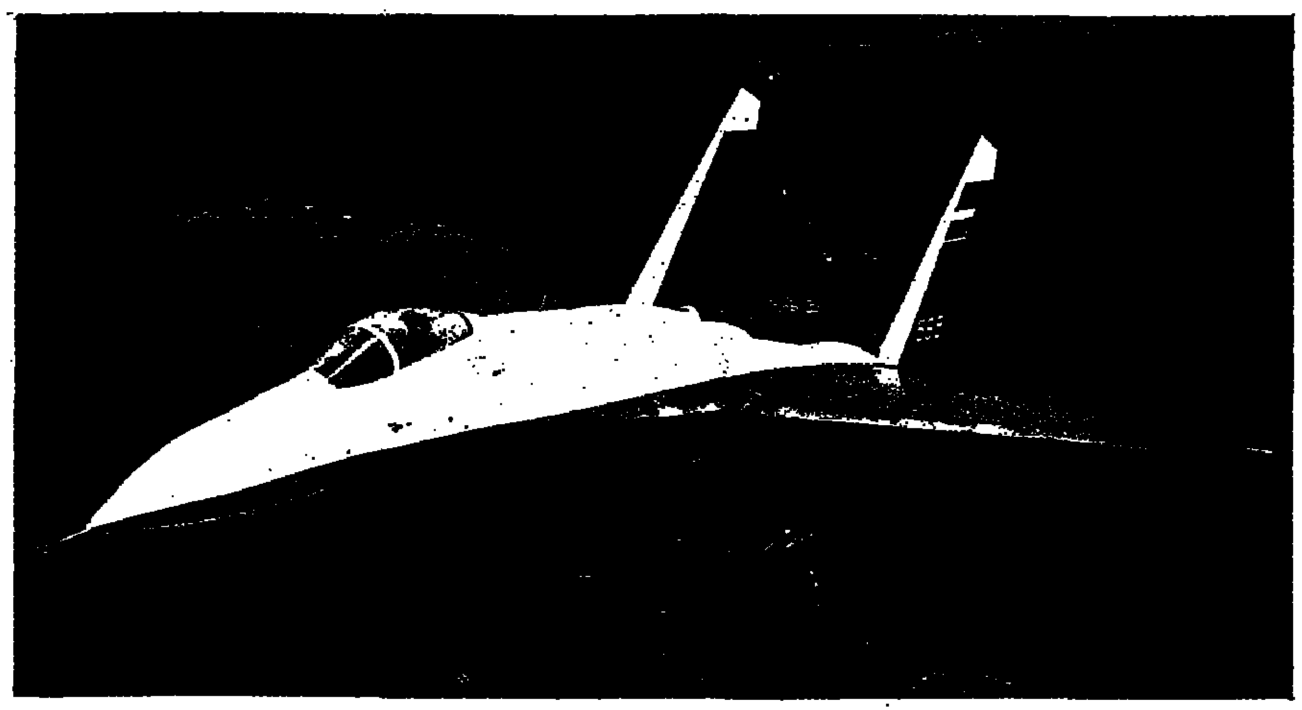
Within Europe, the market in the larger countries remains largely divided along national lines, with the consequences of wide-scale duplication and inefficiency. Progress towards opening up trade in arms in line with other industries has been slow.

The Independent European Programme Group (IEPG), made up of European Nato allies, has succeeded in increasing the opportunities for companies to bid for contracts in other European countries. Further moves will have to await the outcome of the ratification process of the Maastricht treaty, which places Community defence responsibilities in the hands of the Western European Union. Problems then needing to be resolved include the status of Turkey and Norway, which are in the IEPG but not the EC or WEU. Proposals such as a joint European procurement agency, favoured by Germany and Holland, still appear remote.

Takeovers have increased the concentration of Europe's arms industry, which is in the throes of drastic workforce reductions. But despite much talk about the potential for multinational industrial groupings in Europe, the only truly cross-border ventures to have got off the ground are Matra Marconi Space, which has brought together the bulk of the space activities of France's Matra and the British GEC group, and Eurocopter, the helicopter company formed by Aérospatiale of France and MBB of Germany. In the cost-cutting climate, multilateral collaboration on specific projects has come under strain – the European Fighter Aircraft being only one, albeit spectacular, example.

A series of tentative links has been made between European companies, however, for new-generation equipment ranging from vehicles to air combat radars.

The sharp change in defence structures and priorities – the thinning-out of forces in continental Europe, the new emphasis on mobility and flexibility, the needs of peacekeeping missions and arms control enforcement – undoubtedly creates new equipment requirements which will go some way towards compensating for the business defence contractors have lost. But governments are in no hurry.



Glyn Genin

The world has changed: a Russian-built Sukhoi 27 Flanker fighter shows its paces over London's M25 orbital motorway

US hit by missiles shakeup

New targets for rocket makers

AFTER A false start in Europe, the shake-out in the missile business has begun in earnest in the US.

The sale of General Dynamics' guided weapons business to Hughes Aircraft, the General Motors subsidiary, creates a missile company of roughly equal dimensions to the one British Aerospace and Thomson-CSF of France tried unsuccessfully to set up by merging their operations.

The move, announced in May, is expected approximately to double Hughes' turnover in missiles to $2.7bn. But it does not afford Hughes the same domination of the US industry that the planned BAe-Thomson venture would have enjoyed in Europe. Hughes, with wide-ranging interests in defence electronics, followed the announcement with plans to shed 9,000 jobs over the next 18 months, about 15 per cent of its workforce.

General Dynamics, perhaps the most broadly-based of all US defence manufacturers with products ranging from combat jets to tanks and submarines, decided to ditch its missile activities as part of a plan to reduce itself in size in response to the downturn in defence spending, rather than try to diversify into new civilian activities.

Missiles made up about 16 per cent of General Dynamics'

The industry remains crucial but it is over-crowded and projects are falling

$8.75bn sales last year. This included production of the Tomahawk cruise missiles that were launched from US warships in the Gulf war, and Stinger shoulder-fired weapons. The company had considered including missiles as one of its future "core activities". But Mr William Anders, its chairman, said it "could not achieve sufficient market position to be the leader in a field which includes nearly a dozen firms in the US alone."

That statement summarises the challenge facing the missile sector. It will remain a central part of the defence business, a large and diverse sector with a wide range of products, subject to constant technological advances. But the industry is over-populated and the number of projects is getting smaller.

The confidence of US manufacturers in the products they have developed has meanwhile been undermined by the policy of "second-sourcing" production of weapons such as the Stinger or the Standard naval air defence missile. Further concentration in the industry – which includes Boeing, Hughes, Lockheed, Loral, Northrop, Martin Marietta, McDonnell Douglas, Raytheon, Rockwell and Texas Instruments – can now be expected.

In Europe, the Eurodynamics venture confidently planned by BAe and Thomson was abandoned early last year after failure to agree on the value of the two companies' respective businesses – the French company having been boosted in the interim by a fresh air-defence order from Saudi Arabia. Thomson, which saw BAe's weapon production complementing its own expertise in guidance systems, sought a similar match in the US with the planned takeover of the missile business of LTV, whose activities include the international Multiple Launch Rocket System.

However, Thomson's plan, part of a $450m deal for LTV accepted by a New York bankruptcy judge, came up against the barrier of US security concerns.

Seeking to consolidate its position in air-defence systems, Thomson reached agreement last year with Short Brothers of the UK on joint development of a new generation of weapons, succeeding the Shorts' latest Starstreak system.

GEC-Marconi, the traditional supplier of guidance for BAe weapons, has meanwhile set out to challenge BAe's position as the automatic UK choice as prime contractor for missiles. With BAe in the throes of rationalising its Dynamics division – currently being reduced to 5,300 employees, less than a third of the level of four years ago – it recently completed the takeover of Ferranti International's missile operations. The acquisition provides GEC-Marconi, which has also established links with Matra and Dassault Electronique of France, with a capability for producing complete weapon systems.

However, the company had a bitter disappointment when it failed in its bid with Matra to supplant BAe's long-troubled Advanced Short-Range Air-to-Air Missile project (Asraam). BAe, collaborating with Hughes, won the £570m contract for development and initial production for the RAF in March, just before the general election.

BAe and GEC-Marconi are also on different sides in a contest to supply a medium-range surface-to-air missile, replacing the already retired Bloodhound. BAe has entered a joint bid with Raytheon of the US, proposing an updated version of the Patriot missile which gained fame in the Gulf against Iraqi Scuds, together with an additional purchase of BAe's latest Rapier 2000 low-level air-defence system. GEC-Marconi has meanwhile joined with the French-Italian Eurosam consortium to offer the SAMP-T, part of a new family of missiles. Hughes is also competing, alongside NFT of Norway, with a ground-launched version of its Advanced Medium-Range Air-to-Air Missile (Amraam).

Another £500m-plus battle is shaping up between potential British, French, US, Swedish and Italian contenders for a conventionally-armed stand-off missile for the RAF, expected to be decided late next year or in early 1994.

The UK also still has plans for a nuclear-armed stand-off missile. However, Mr Malcolm Rifkind, the UK defence secretary, said recently that this was "certainly not something I am expecting to arrive on my desk in the next few weeks".

David White

AEROSPACE 4

Commercial rivalry is flowering in space, writes **Daniel Green**

The Russians are coming

ALMOST HIDDEN in the long list of space collaborations agreed in June by Presidents Bush and Yeltsin at their Washington summit was one that could have more economic impact than the rest put together: Russia can now bid for contracts to launch US-built telecommunications satellites.

At a stroke, Russia could become the most powerful recent entrant into an industry that has attracted the interest of many countries. Its impact will be all the greater because many in the list of hopefuls, such as Japan and Brazil, have encountered technical and budgetary problems or trade barriers that have slowed their progress towards commercial sale of launches.

Russia is in a good position to compete with established launch organisations. It has six different rocket launchers on offer.

The biggest, the Proton, can lift large satellites into geostationary orbits, which is usually necessary for telecommunications and satellite broadcasting.

Russia could make its presence felt quickly, driven by a need for hard currency and the immediate availability of its technology.

It has already this year offered Proton to Inmarsat, the international consortium which operates satellites for mobile communications.

However, obstacles still remain in the path of the Russian Space Agency. Apart from the economic instability, the main rocket launch site is in another country, Kazakhstan, which has set up its own space agency. Progress has been made in recent weeks. In June, the two apparently came to an agreement over the joint use of Baikonur.

If Russia is on the point of joining an elite group of nations which can offer commercial launches, it will soon find itself competing with some well-entrenched opposition.

Ariane is the world's most successful commercial satellite launcher. Operated by the French-led Arianespace consortium, it claims to have launched more than three quarters of the world's commercial satellites.

The company last year had sales of FFr5.87bn, is profitable and is designing the next generation of launch vehicle, the Ariane V. The first launch is expected in 1995 with commercial operations set to start a year later.

Arianespace's biggest rivals are in the fragmented US market. Seven years ago there were only two serious contenders in the space launch business: the US Space Shuttle, built by Nasa, and Ariane.

Then came the Challenger disaster in 1986 and the announcement by Nasa that the Space Shuttle not be used for commercial space launches.

A flood of launch orders for the private sector followed. Ariane was the main beneficiary, but three US defence companies also picked up business: Martin Marietta, McDonnell-Douglas and General Dynamics. Partly as a result of their late entry into the business, however, the US companies lag far behind Ariane in the value of commercial orders they are winning today.

They have also been cushioned from the need to rely on commercial orders by defence contracts.

McDonnell-Douglas, for example, is still launching satellites for the US military's Global Positioning System, a network of satellites that allowed allied forces to navigate across the featureless desert in the Gulf war.

Currency-hungry Russia, with six different rocket launchers on offer, could make its presence felt quickly

Of the company's 11 launches this year, only three are commercial. "Could we afford to stand on our own without the military? I don't think so," says one senior executive at McDonnell-Douglas.

The three US companies might find it hard to reduce their dependence on the military, where they are protected from foreign competition, by plunging further into the civil sector.

Prices there threaten to reach new lows as the likes of China and Russia enter the fray. Typical of the fall in launch costs brought by more competition is the Chinese Long March III rocket. This month it is scheduled to take into orbit an Australian communications satellite at a cost of about $30m, compared with more than $50m for a US or Ariane launch.

China is not the only country attracted by the possibility of chunky dollar earnings from space. Governments also like the idea because they believe it will help in developing missiles.

Rocket technology is basically simple – to create a controlled explosion at one end of a metal tube – and available in theory without recourse to the latest in western high technology.

So there are many countries at various stages in the race to build launchers.

- India launched a satellite in May shortly after Washington imposed limited sanctions against the Russian and Indian space organisations. The US objected to Russia's proposed sale of rocket technology which India says is for its space programme but the US thinks could be used for ballistic missiles.
- Japan has intended to test launch its H-2 rocket in February next year. But Japan has chosen an unusually advanced design and has had persistent difficulties in test firings.
- Israel whose Jericho 2 military missile has been converted for space use as the Shavit and has successfully launched small test satellites.
- Brazil, which has its Veiculo Lancador de Satellites (VLS) booster, based on the Sonda 4 rocket. Its development has been stifled by technical and budgetary problems and Western technology-transfer controls.
- Other countries reported to have space programmes include Iraq, North Korea and Argentina.

That such programmes will find commercial customers is unquestioned. The satellite services market is an immature industry that is growing quickly despite the worldwide economic slowdown.

Telecommunications is still by far the largest area of application for civil satellites. New customers include third world countries eager to leapfrog the technology of copper cabling. Satellite telecommunications appeals to physically large countries, perhaps with many islands or difficult terrain, where cabling would be expensive.

In June, a McDonnell-Douglas rocket launched Indonesia's fourth telecommunications satellite in its second launch programme. The third launch programme is already scheduled for the mid-1990s.

Satellite broadcasting is a much smaller business, but growing quickly thanks partly to European deregulation.

Observation satellites are among the industry's favourites for sharp growth through the 1990s. They are used to forecast weather, keep track of changing surface temperature and other environmental applications.

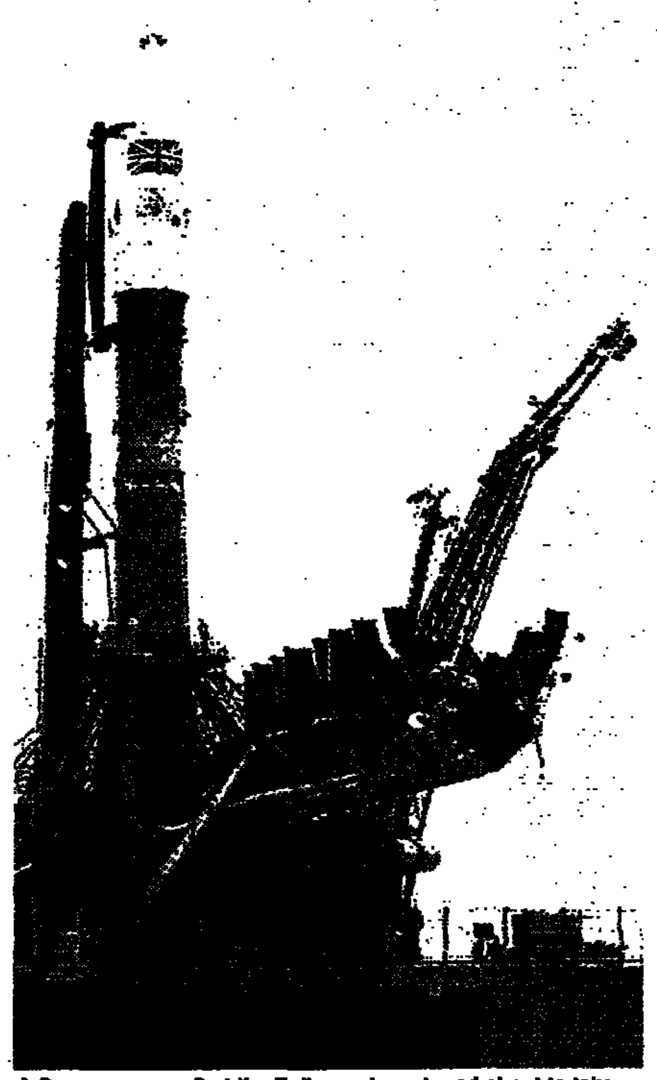
Importantly, earth observation from space is seen by the military as a better value for money than thinly spread ground personnel.

More emphasis is being placed on earth observation in the post-Cold War world where the US, UK and France increasingly see their roles as global. The UK defence White Paper in July made explicit the UK's interest in widening its defence activities to more than just Europe and the North Atlantic.

For that reason, in the US satellites are taking an increasing proportion of defence spending. "The space budget is holding steady while other budgets are falling", says the US Air Force space procurement division in Los Angeles.

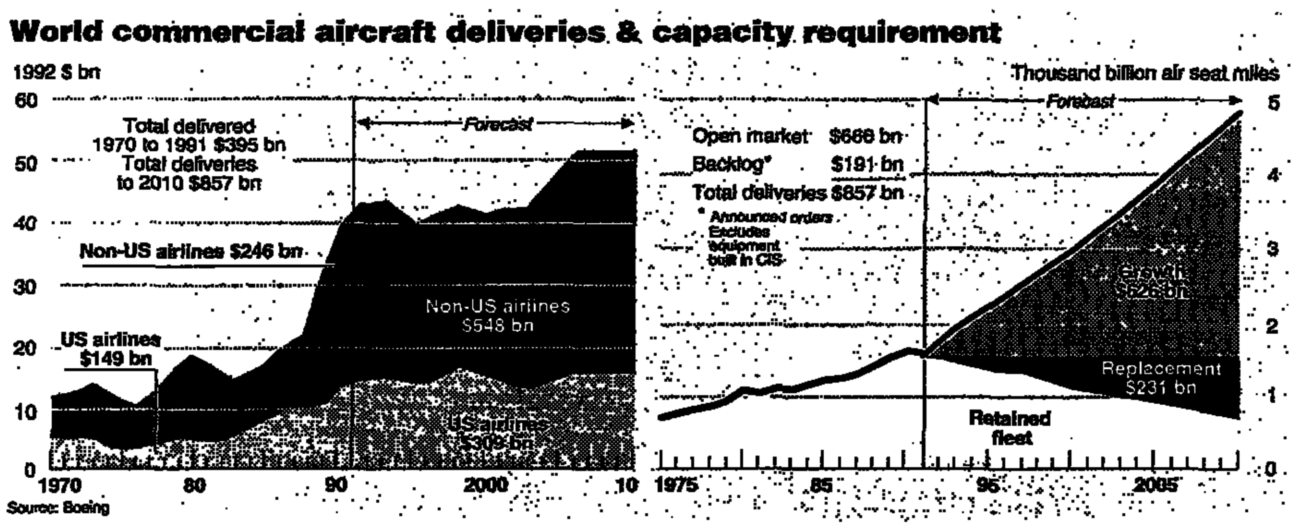
And military cash means that the US launcher manufacturers can afford to invest in new fuels, re-usable launchers and air-launched rockets. With these developments they may be able to cut costs low enough eventually to compete with the likes of Russia while maintaining the reliability of US and Ariane launches.

This perhaps helps explain why the US launch industry is sanguine about the threat of the Russian and Chinese launch industries: it can continue to rely on defence contracts while developing the technology that will allow it one day to compete for civil contracts on its own terms.

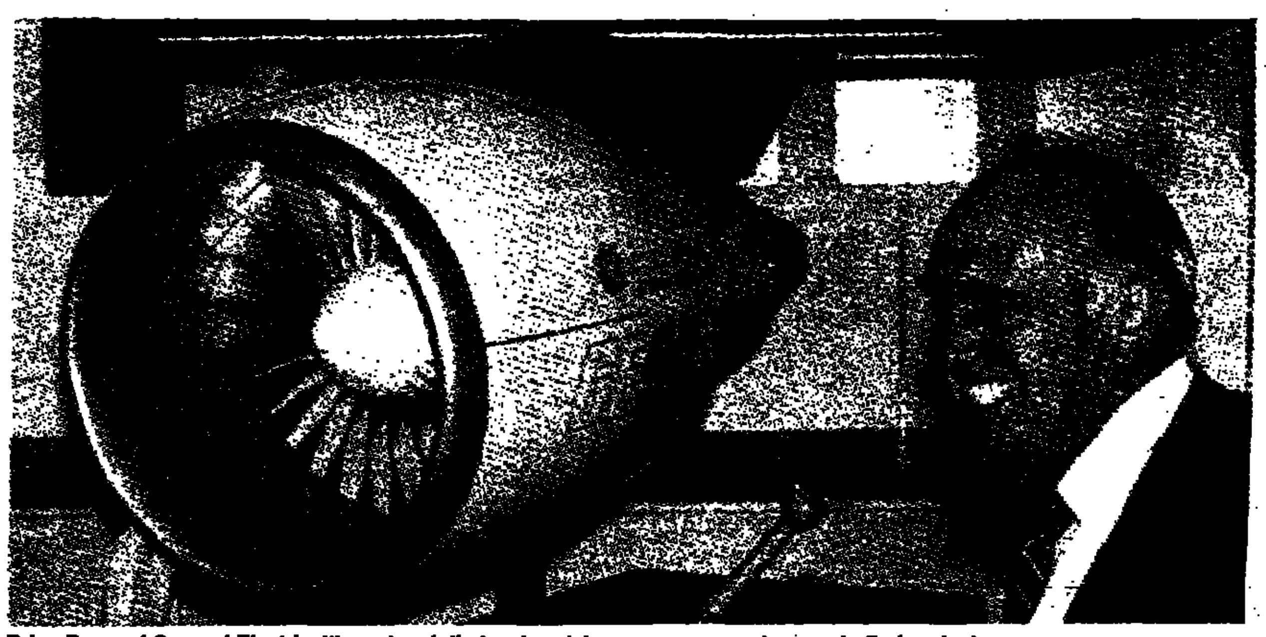


A Soyuz spacecraft at the Baikonur launch pad about to take off last year with two Russians and a British woman on board

World commercial aircraft deliveries & capacity requirement



Source: Boeing



Brian Rowe of General Electric: It's so tough that we're giving away new engines and offering deals on spares

Aero engine makers are in a grim mood, **Paul Betts** finds

Sales remain grounded

EVEN by its own cut-throat standards, the aero-engine industry has been going through a particularly rough patch during the last year.

The decline of military sales in the post Cold War defence market and the lingering recession in the civil side of the business have taken their toll on all the leading aero-engine manufacturers.

Profits have slumped, restructuring has intensified in a drive to cut costs and increase competitiveness, while research and development spending on future engines has remained high.

To win new engine orders in the current depressed market, the big three aero-engine makers (General Electric and Pratt & Whitney in the US and Rolls-Royce in the UK) have been forced to make hefty concessions and offer enlightened terms to attract customers.

"We must stop killing ourselves with our crazy pricing structure," remarked Mr Brian Rowe, the head of GE's aero-engine operations during a visit to the big US company's plant in Cincinnati. "We are not only having to give away new engines but we are now having to make deals with airlines on spare parts. That's how tough it is," he added.

Sales of spare parts have traditionally been a large source of profit for engine manufacturers. But the slump in air travel caused by the Gulf crisis last year and the subsequent recession in many western markets has had an inevitable impact on the spares business.

There are now signs that air traffic is recovering, but airlines are still financially squeezed and a significant pick-up in the aircraft and engine ordering cycle is not expected by the industry until later next year or perhaps not before 1994.

During the past 12 months even small orders have provoked big battles. Some have ended in court. When Malev, the Hungarian airline, cancelled a Pratt & Whitney engine order for GE engines to power two Boeing aircraft, Pratt took legal action. An even bigger row erupted when British Airways decided to buy GE rather than Rolls-Royce engines to power its new fleet of Boeing 777 widebody jets.

The combined pressures of the market and the frustration of the European Airbus consortium over its repeated failure to win an order from BA prompted Mr Jean Pierson, the Airbus chairman, to attack the BA deal with Boeing and GE. Airbus asked the European Commission to investigate the deal but ultimately decided not to file a formal complaint. BA, Boeing and GE all rejected allegations of foul play.

The BA deal eloquently reflected the current battle in the aero-engine market focused on the new large commercial engines being developed by all three manufacturers in partnerships with other second tier engine makers. These partnerships are designed to help reduce the financial risks of developing these new engines.

GE is spending about $1.5bn to develop its new GE90 heavy thrust engine which was chosen by BA for its Boeing 777 fleet. Rolls-Royce is investing around £400m to develop a large thrust version of its RB211 engine family called the Trent. And Pratt & Whitney is also investing heavily in the development of the PW4000.

Widebody aircraft are forecast to absorb an increasingly large share of the commercial jet market during the next 20 years. Airbus expects the average aircraft size to grow from around 174 seats today to 241 seats by 2012.

The battle for this important new market has so far been even. Pratt took an early lead by winning the first big Boeing 777 engine orders from United Airlines and All Nippon Airways. GE struck back by winning the BA order and Rolls-Royce subsequently retaliated by clinching Boeing 777 orders from Emirates, the Dubai-based airline, and Cathay Pacific, the Hong-Kong carrier.

The problem for engine manufacturers is that the development costs of new commercial engine programmes take much longer to recoup than those of an airframe. In the case of an airframe, payback can come in around seven years; for an engine, the figure is between 10 to 15 years.

For this reason, the industry believes that the leading engine manufacturers will be forced into forging even broader collaborations than their existing risk-sharing partnerships on specific engine programmes.

GE has already established a long and fruitful alliance with Snecma, the French state-controlled aero-engine group. Pratt, more recently, has linked up with Motoren-und-Turbinen Union (MTU), the aero-engine arm of Deutsche Aerospace. Rolls-Royce has also formed a joint engine venture with BMW of Germany.

However, some industry experts believe it will be eventually necessary for the big three engine makers to consider some form of wide-ranging alliance because they argue that three large manufacturers are too many for the market to sustain.

The longer payback period for developing an engine – 10-15 years compared with about seven for a new airframe – is likely to force leading manufacturers to broaden their collaboration

Rolls-Royce, which broke off a partnership with GEin 1986, disagrees and has made it clear it is not seeking strategic alliances with either GE or Pratt, its two principal and larger US competitors.

Instead, the UK group appears determined to "go it alone" and to continue to broaden its market base to secure a 30 per cent share of the commercial jet engine market by the middle of the decade. To this end, the UK company has shown an interest in possibly investing in a large minority stake in the US Allison engine company. This would resurrect Rolls-Royce's presence in the large turboprop, small and medium turboshaft and small jet sectors in which the UK company was once active.

But if Rolls-Royce is ruling out any wide-ranging association with one of its main US competitors in the aero-engine business, it has decided to forge a 15-year partnership in the industrial power generation sector with Westinghouse of the US. The agreement reached with Westinghouse in June is consistent with the UK company's efforts to broaden its overall industrial base to compete more strongly with its two rival US aero-engine manufacturers, both of which are part of much larger diversified industrial groups.

The first important move by Rolls-Royce to increase its power generation activities was the acquisition three years ago of Northern Engineering Industries (NEI), the UK power equipment supplier. This diversification strategy helped Rolls-Royce, far more dependent on aero-engines than GE or Pratt, to ride through the current cyclical slump in the commercial aero-engine market and the decline in military aero-engine activity.

Industrial power accounted for 42 per cent of the UK company's £3.5bn sales last year and made a pre-tax profit of £73m compared with a £6m loss by the aerospace division. But to make headway in the world market and increase the share of its industrial power operations to 50 per cent of group turnover, Rolls-Royce decided it needed to negotiate a partnership with Westinghouse, the traditional rival of GE in the industrial power generation business.

The decline in the military aerospace business has now put additional pressure on aero-engine manufacturers to concentrate increasingly on commercial jet engine and industrial power operations. Although the civil market is still struggling because of the recession and the financial problems of airlines, the industry remains confident it will recover.

It also expects new markets to emerge including the vast potential of the Commonwealth of Independent States, the former Soviet Union anxious to develop strong ties with western aerospace partners, and the replacement of older aircraft with new more environmentally friendly jets. The challenge for aero-engine manufacturers is to pull through the current recession to cash in eventually on a commercial jet engine market with sales forecast to total about $200bn over the next 20 years.

Helicopters' military potential is widening, writes **David White**

Gulf war set a new pattern

HELICOPTERS are not only versatile but also surprisingly robust machines – and that is their curse as well as their blessing.

When civil operators or defence ministries want to trim non-essential spending, replacement purchases of helicopters can nearly always be put off.

Take the Wessex, a British version of the Sikorsky S-58, dating from the early 1960s and used by the RAF for transport and search and rescue. It is 20 years since it merited an entry in Jane's *All the World's Aircraft*, but the Wessex is still in service and could well be 35 years old before it is retired.

Delays in new orders, particularly from the military, are the constant frustration of US and European helicopter manufacturers. In the longer term, prospects for military helicopters would appear to be bright, at least in comparison with most other defence equipment sectors. Helicopters proved their worth on the modern battlefield during the land campaign to recover Kuwait in early 1991 – and as happened when they were used by US forces in Vietnam, revealed new potentialities. The US AH-64 Apache found another role when it rounded up Iraqi prisoners.

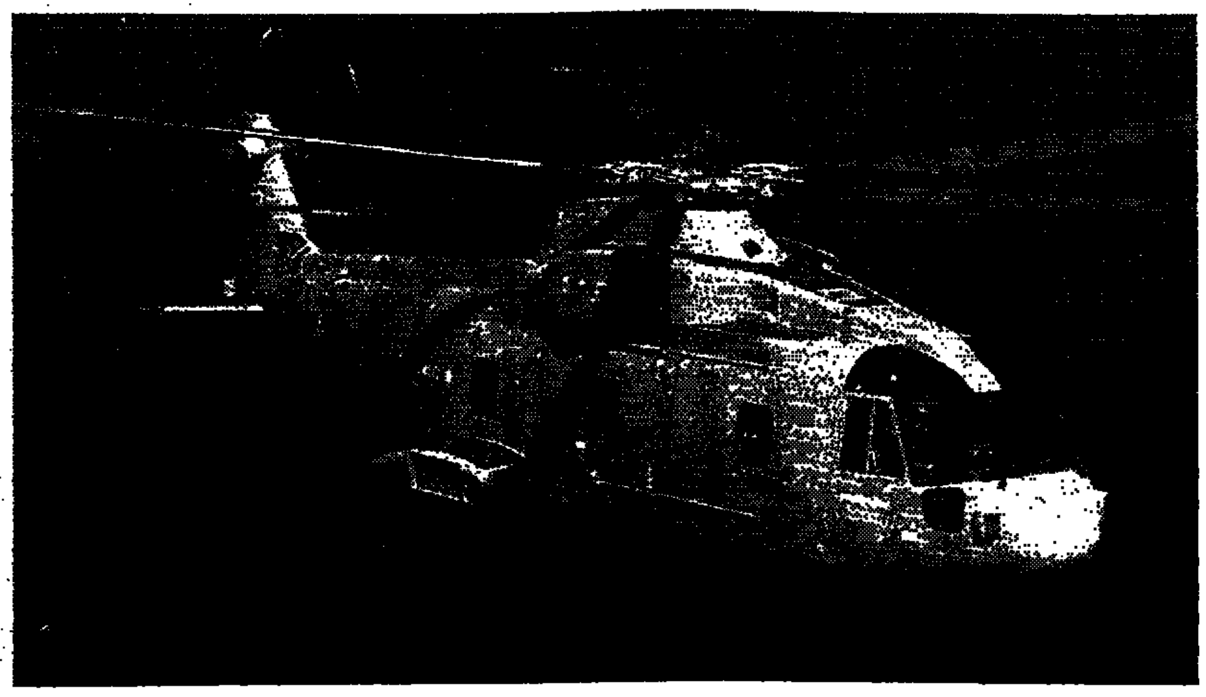
In future, the helicopter's usefulness should increase with the remodelling and reduction of forces, particularly in order to move troops rapidly.

In the short term, however, industry analysts expect a fall in deliveries of military helicopters, which have been running at a rate of about 500-600 a year excluding the former communist countries. This is despite signs of demand from some developing countries.

The civil market, where total sales run at about 1,000 a year including about 400 very light helicopters, is expected to show some increase. In the small helicopter sector, there is a move towards twin-engined rather than single-engined models, and in the offshore industry the trend is towards larger helicopters. However, growth is not expected to be spectacular.

Military orders will continue to provide the industry's backbone on both sides of the Atlantic. Despite the lessons from the Gulf conflict, both the US and the leading European nations are taking their time to decide on their future helicopter needs following the collapse of the Soviet military bloc.

The new RAH-66 Comanche armed scout helicopter, a programme which Boeing and Sikorsky won only last year in a competition against the other two US manufacturers, McDonnell Douglas and Bell Helicopter Textron, has been put on the shelf. Development of prototypes is continuing, but the Pentagon has put off production to an unspecified date, leaving the US Army to make do with an ungraded fleet of Apache and OH-58 Kiowa aircraft, the latter originally developed in the 1960s.



A Royal Navy Westland Merlin: a world market is foreseen, but some purchases are under question

Another major US project, the tilt-rotor V-22 Osprey, a hybrid between a helicopter and a fixed-wing aeroplane being developed by Bell and Boeing, was "killed" and then – in a way that only ever seems to happen in the US – brought back to life. In the face of a strong congressional lobby, the Pentagon agreed in July to allocate $1.5bn towards the cost of an initial six production versions. But there is no commitment to follow this up with purchases for the US Marines.

Elsewhere, projects have been put back. The NH-90 military utility and naval helicopter, involving France, Germany, Italy and the Netherlands, has been leading a precarious existence, with the French government balking at development costs. Following an agreement in May to award a $1.7bn development contract, France has postponed planned deliveries of the army version by two years to the beginning of the next century, in the meantime extending the life of current Puma models.

The Franco-German Tiger, an anti-tank and support helicopter, has suffered a similar fate, with both partners delaying initial deliveries by two years.

The UK, whose joint project to build a light attack helicopter with Italy, Spain and the Netherlands predictably collapsed in 1990, is due to invite tenders this October for an anti-tank helicopter. That, too, might be delayed.

The Ministry of Defence is insisting on holding a competition despite pressure within the army to opt for an immediate purchase of McDonnell Douglas's Apache. Rivals to the latest Apache model, which would be assembled by Westland in the UK, are the Eurocopter Tiger and a version of Bell's AH-IW Supercobra, known as the Cobra Venom. British Aerospace announced in February a preliminary agreement to study collaboration on the Tiger for the British army, and GEC Avionics is heading the Cobra Venom bid with Bell.

The MoD aims to sign a contract in mid-1994. Eventually it is expected to buy about 125 of the anti-tank helicopters, for a value expected to be more than £2bn. Current plans are that the army should start operating the helicopters in 1997, but the ministry has told manufacturers this target "may not be compatible with the most cost-effective solution". A later date might increase the Tiger's chances.

Doubts about the future of the Anglo-Italian EH101, a three-engined helicopter designed for naval, utility and civilian uses, were lifted a year ago when the UK government placed a £1.5bn contract with IBM of the US to manage the supply of 44 EH101 Merlins for the Royal Navy. IBM had bid for the contract in collaboration with Westland, which has been developing the EH101 airframe with Agusta of Italy.

The decision to appoint a prime contractor reflected concerns about the timing and cost of the programme. The helicopter has been under development since 1984. In 1985 it was expected to be in service in 1990, although the House of Commons defence committee ventured to suggest even then that this might be "slightly delayed". The EH101 is now due to be operating in the second half of the decade. Westland foresees a potential world market for between 550 and 750 units. But anticipated Canadian orders and further UK purchases for troop transport have both been under question.

Problems for western European and US helicopter companies are now accentuated by potential rivalry from the two ex-Soviet producers, Mil and Kazov, possibly with western partners.

The number of competing producers has been reduced through the formal setting up of Eurocopter in January, bringing together the helicopter operations of France's Aérospatiale and Germany's MBB. The new company can lay claim to being the world's largest manufacturer of civil helicopters, but is still heavily dependent on the NH90 and Tiger military programmes. Closer links between Westland and Agusta could form a second European manufacturing "pole". The US continues with four manufacturers (excluding the very light sector), but this may not last.

COMPONENTS SUPPLIERS

Many are destined to disappear

PAUL BETTS reports that the thousands of component manufacturers are the main casualties of the recession and defence cuts. Boeing, the world's biggest builder of commercial jets, finds dual sourcing is becoming too costly and is therefore reducing the number of its suppliers

THE AEROSPACE industry is structured like a pyramid, Mr Larry Clarkson, Boeing's vice-president of planning and international development, recently noted.

At the top are the large aircraft manufacturers – Boeing, Airbus, McDonnell Douglas, British Aerospace, Fokker and the Russians. Below them are more than 200 major aerospace structure and assembly suppliers. And at the lower end of the pyramid are many thousands of companies responsible for building smaller but critical parts for aircraft.

These many aerospace components manufacturers have found life even more difficult than the prime manufacturers in the current down cycle. The profound changes caused by the structural decline in defence activities and the financial slump in commercial aviation is likely to lead to significant changes in the relationship between prime contractors and their suppliers.

Boeing, the world's largest manufacturer of commercial jets, says it is already reducing its suppliers. "Until recently, in many cases we had two or more suppliers providing the same component.

The fact is dual sourcing is very expensive and we have had to find ways to be more and more competitive," Mr Clarkson explained.

The changing relationship with the prime contractors coupled with the uncertainty of the market is now speeding up the trend towards greater consolidation in the aerospace components sector as well as prompting most companies to increase their presence in the commercial side of the business to offset the decline in defence activities.

The successful takeover this year of Dowty, the UK aerospace components and information technology company, by TI Group, the British specialist engineering concern, is an example of this trend. One of the attractions of Dowty for TI was the possibility of integrating and merging the two companies' aerospace activities to create a business with annual sales of £400m and a more competitive critical mass.

Smiths Industries, another leading UK aerospace components supplier, has been in talks with the Collins Avionics division of Rockwell International of the US to create an important avionics partnership.

The idea is to create a third force in the commercial avionics sector to compete against Honeywell, the US company which is the current market leader in this sector, and against the French Sextant avionics group.

The move would rationalise the commercial aircraft avionics business along the same lines as the other main sectors of the commercial aerospace industry dominated by three airframe manufacturers (Boeing, Airbus and McDonnell Douglas) and three engine makers (General Electric, Pratt & Whitney and Rolls-Royce).

The industry argues that there is only room in this market for three groups to provide the avionic systems for the flight decks of commercial airliners. Honeywell already controls about 35 per cent of the world market and is dominant on McDonnell Douglas aircraft. In France, Aérospatiale has merged its avionics activities with those of Thomson CSF to form the Sextant group which is the dominant supplier of European Airbus airliners. The partnership between Smiths and Collins is expected to concentrate on winning business from Boeing which makes up about 55 per cent of the world airliner market.

All the leading aerospace equipment suppliers have been forced to develop a global presence to survive in the business. All the large UK companies in this sector, including the General Electric Company (GEC), Smiths, Dowty and Lucas Aerospace, have become global players producing equipment not only for the UK aerospace industry but for aircraft and engine manufacturers throughout Europe and the US.

Mr Antony Edwards, managing director of Lucas and last year's president of the Society of British Aerospace Companies (SBAC), explained that Lucas saw in the early 1980s that the company was much too dependent on two major customers: Rolls-Royce and the UK Government.

He said that while nurturing these important customers, the company set about broadening its customer portfolio, concentrating on the US, which accounts for about 70 per cent of the western world aerospace market.

"But to succeed in the US, particularly in the military market, it was necessary to have manufacturing facilities on shore.

After a planned acquisition programme, 40 per cent of our sales now originate from our own US operations," he said in a recent speech. He added a similar process was undertaken in Europe through acquisitions and joint ventures to give Lucas substantial manufacturing operations in France, Germany and Spain as well as in the UK and the US.

Lucas is just one example. GEC, Dowty and and Smiths have all taken the same route and own a wide range of companies in the US.

The French Thomson CSF group has been equally active in attempting to build up its presence in the US market through acquisitions and partnerships. This trend is now likely to accelerate in combination with greater transnational concentration in the industry as prime contractors and other aerospace components customers continue to reduce the number of their suppliers.

A RAF Tornado: provisional sales of the Anglo-German-Italian jet to Jordan, Oman and Malaysia have fallen through

Airforce suppliers are in a murderous mood, writes **David White**

The dog fight gets dirty

WITH DOUBTS hanging over almost all new combat jet projects, military aircraft manufacturers are fighting bitter and sometimes dirty battles to secure export orders for their current-generation aircraft.

Since the Gulf war, most of the trophies have gone to the US, at the expense of the European industry. McDonnell Douglas's recent deal with Finland for 64 F/A-18 fighters, valued at between $2bn and $3bn and matched by industrial offsets for the full value of the sale, was a politically significant breakthrough in a neutral country.

The aircraft to be replaced were Russian MiG-21s and Swedish Drakens. The Swedes had high hopes for their new JAS 39 Gripen, the French equally so for Dassault Aviation's upgraded export jet, the Mirage 2000-5. Dassault described the decision as "surprising".

The deal followed the confirmation last year of a Swiss decision in favour of the F/A-18 – although that deal, worth some $2.4bn including spares, is now due to go to a referendum. The Swiss authorities originally opted for the F/A-18 in 1988 over the Mirage 2000 and General Dynamics' F-16, but then ordered a re-evaluation, with the Russian MiG-29 and Su-27 also joining in the contest.

McDonnell Douglas has been through similar re-appraisals over the F/A-18 before – winning in Spain in 1983 and losing last year in South Korea to the F-16, a 120-aircraft deal worth more than $5bn. Although the F/A-18 is still some way from rivalling the success of the F-16 in Europe, the Middle East and Asia, McDonnell Douglas hopes to export between 270 and 470 more over the next five years.

The Swiss and Finnish decisions were a big setback for Dassault, which was looking to these countries to bring a revival in its export business, flagging since the mid-1980s. After the failure of the Mirage 4000, a twin-jet aircraft developed with its own money, it has yet to find a customer for the 2000-5 version of the Mirage, which it has equipped with a new look-down radar to take on US competition in world markets. The company has not clinched an export deal for combat aircraft since 1988, and that deal – with Jordan – has since been suspended.

Dassault has now set its sights on more controversial targets – Taiwan, where the US has for the past decade been unwilling to sell advanced fighters, and Pakistan, where an argument over nuclear weapons development stands in the way of more deliveries of US F-16s.

Disappointments are not confined to the French. Hopes for the Anglo-German-Italian Tornado – except for the Saudi deal under way since 1986 – have been unfulfilled. Provisional deals with Jordan, Oman and Malaysia all fell through, although in the latter two cases they were substituted by sales of British Aerospace Hawk fighter/trainers. A new contest is now under way in Malaysia, with a proposal for leasing Tornados through the RAF put forward in a competition against the F/A-18, F-16, Mirage 2000 and MiG-29.

BAe has been kept waiting anxiously for confirmation of a further sale of 48 Tornados to the Saudis agreed in principle four years ago, while McDonnell Douglas has been waiting for US administration approval to sell the Saudis 72 more F-15 fighters - both deals vital to the respective manufacturers' production plans. Budgetary pressures in Saudi Arabia following the Gulf war have added to the tension over new contracts. A further deal in prospect involves the replacements for more than 100 ageing Saudi F-5 fighters, with the F/A-18 and F-16 both likely contenders.

Overall sales of front-line combat jets can be expected to decline as the F-15/F-16 generation comes to an end, giving way to a sparser generation of more expensive aircraft. However, the market for light fighters such as the Hawk and the Italian-Brazilian AMX is expected to increase.

Possibly never have so many questions been raised about military aircraft programmes as now, in the light of changing defence policies and tough spending constraints. The questions involve numbers, specifications, timing and in some instances the overall viability of projects already well under way.

A sobering blow was struck early last year with the US decision to cancel the A-12 naval attack aircraft being developed jointly by McDonnell Douglas and General Dynamics, a $52bn project. This has been followed by a reduction in the programme for Northrop's extraordinary B-2 stealth bomber to 20 aircraft, compared with an original plan for 132. The bombers will now work out at some $2.2bn apiece.

The F-22 being developed by Lockheed, Boeing and General Dynamics, chosen last year to succeed the F-15 as the top-of-the-range US Air Force fighter, has been protected in US budget plans, as has the McDonnell Douglas C-17 heavy transport aircraft. But other plans are subject to a battle over priorities. They include the navy's AX requirement (in lieu of the cancelled A-12) and the USAF's need for a new or upgraded multi-role fighter to succeed the current F-16.

France's Rafale, being developed at Dassault both for navy and air force use, has suffered a revision since the French experience with single-seat Jaguar ground-attack fighters in the Gulf conflict. The French air force has switched its emphasis to two-seat versions and has put back delivery plans. The first air force Rafale squadrons are not now due to be formed until the early 2000s.

After taking separate paths in the mid-1980s, when the French broke away from the European Fighter Aircraft project, BAe and Dassault have agreed to undertake joint research on the following generation of aircraft, planned for around the year 2020. BAe has also agreed with its Harrier partner McDonnell Douglas to undertake feasibility studies on a supersonic jump jet.

In the world market, US and European manufacturers will have to look to new rivals in the next century.

A recent UK Ministry of Defence assessment foresaw that indigenous combat aircraft production capabilities would to be limited to five Asian countries up to 2005 – China, India, Japan, Taiwan and Israel, all dependent on technical and/or financial assistance. After that date they could be joined by Indonesia, Pakistan, Singapore and Iran – and Japan would by then be fully self-sufficient.

UK aerospace has lost a quarter of its jobs in three years, writes **Paul Betts**

In the throes of transformation

WITH AN annual turnover of £12.5bn and exports of more than £8bn, the UK aerospace industry is Europe's largest and second only to the US.

But it is now facing a series of pressures that are already beginning to alter its fundamental shape and nature, and are likely to have significant long-term repercussions for British manufacturing as a whole.

The industry is in the throes of profound restructuring, to adapt to falling defence expenditure and the recession in civil aviation.

The Society of British Aerospace Companies (SBAC), the industry's trade association, is estimating a 25 per cent fall in employment in the UK aerospace industry between 1989 and the end of this year, because of cuts in defence procurement and the slump in the commercial side of the business. Total employment is expected to fall from 194,000 in 1989 to around 150,000 by the end of this year.

Another 40,000 UK aerospace industry jobs could be directly at risk if *(as discussed on page 12 of this survey)* the European Fighter Aircraft programme collapses. Even though Mr John Major, the prime minister, and Mr Malcolm Rifkind, the defence secretary, have continued to support strongly the £20bn EFA project, the decision of Germany to withdraw from the production phase of the new combat aircraft has made the future of the programme extremely uncertain.

All the main UK aerospace companies have been forced to cut jobs and restructure their operations. British Aerospace, Europe's largest aerospace company, has undergone an extended period of top management turmoil, and is now refocusing its activities on its core aerospace and defence businesses. It has been forced to make extensive job reductions, announced that it is looking for a buyer to acquire a majority of its corporate jet business, and is scrambling to resolve the problems of its loss-making regional aircraft operations.

British Aerospace will make no more civilian jets on its own

It has also made clear that the company in future would no longer develop any new commercial aircraft on its own, and that it would rely increasingly on its 20 per cent involvement in the European Airbus programme for which it provides all the wings.

Rolls-Royce, ranked as Europe's third largest aerospace company, has also been restructuring heavily, closing and rationalising plants and shedding 7,000 jobs over the past two years, in an effort to improve productivity to compete against its two larger US rivals, General Electric and Pratt & Whitney, and to adapt to a shrinking defence market.

Unlike previous downturns, the SBAC is worried by the current shake-out in the industry, because some UK aerospace companies have reported that over 30 per cent of job losses were among engineering and technical staff. "In short, companies are cutting long-term capability," the SBAC said, in a recent briefing paper.

Apart from the loss of manpower, the downturn in both the civil and military sectors is also threatening the long-term health of the UK aerospace industry in other ways, according to the SBAC.

The technology base is shrinking, with cuts taking place without benefit of any national assessment of the core technologies required to ensure that the UK's industry maintains a competitive edge.

Falling sales are limiting the industry's ability to invest in product development. International competition is becoming fiercer, and competitor countries are becoming increasingly aggressive in their international marketing efforts and providing additional support for their indigenous industries.

In the face of a shrinking defence market, aerospace companies have increasingly turned to civil activities, which are expected to show stronger longer-term growth once the airline industry recovers. Aircraft manufacturers are continuing to forecast demand for up to 8,000 new airliners during the next 15 years.

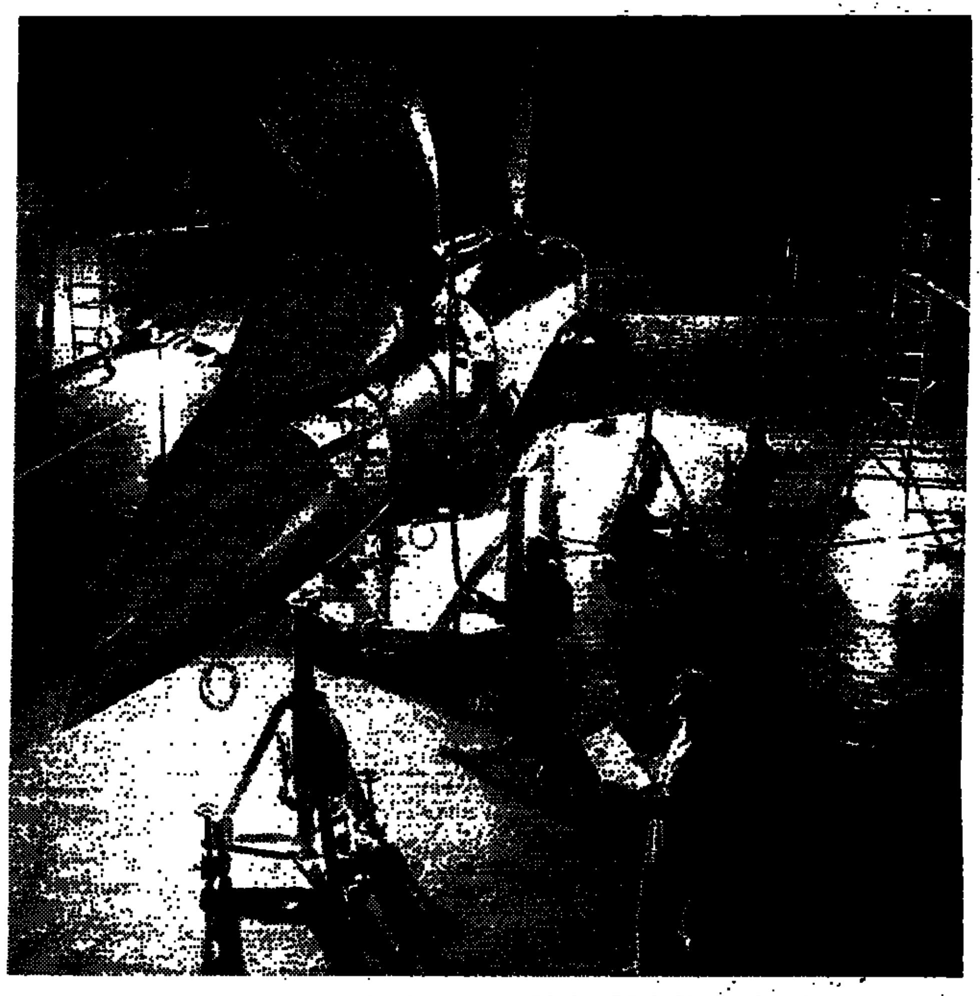
But the SBAC emphasises that aerospace companies will need to invest heavily in new technologies at a time when the costs of product development are growing by between 5 and 10 per cent a year above inflation. "Investment can only come from the return on sales, which, during the current recession, are being squeezed," it adds.

At the same time, there is a close link between the civil and military sides of the UK aerospace business. Reductions in defence activities (a fall of between 10 and 15 per cent in Ministry of Defence equipment expenditure is expected over the next few years, coupled with similar falls in Europe and the US) are bound to have a negative impact on commercial aerospace operations.

"The forecast reductions in overall defence expenditure will affect competitiveness throughout the aerospace industry, because reduced business levels drive up production costs and essential overheads, such as the maintenance of major research and test facilities," warns the SBAC. To adapt to the new circumstances in the defence market and the commercial aerospace slump, the industry is adopting a series of options, including consolidation, greater collaboration, globalisation, or acquisition as has been the case this year with the TI Group's hostile bid for Dowty, the aerospace components maker.

But the industry is also calling for the government to show more robust support by encouraging expansion of the civil aerospace sector and by increasing investment in new space and other civil projects. Additionally, the industry would like to see government launch funds for civil aerospace projects, expanded to include equipment and avionics, as well as backing for large aerospace companies considering investment in fields outside their traditional activities.

The industry also argues that a government policy is needed on defence diversification, to study possible conversions from defence to civil activities. Above all, the UK industry believes a dialogue between companies and the government has become vital, to ensure that the country maintains the optimum defence industrial base and leading-edge technological competence in spite of the current wave of restructuring.



The second EFA development aircraft is being assembled at BAe's Warton Aerodrome, Lancashire (above). The four-nation EFA is described by BAe as a delta canard, single-seat, twin-engined aircraft optimised for air superiority with an air-to-surface attack capability

Reforms ease air links with South Africa, writes **Philip Gawith**

The great trek begins

WHEN Richard Branson, owner of Virgin Airlines, visited South Africa last March, he was effusively welcomed as the man who was going to liberate the South African traveller from high airline prices.

Things haven't quite turned out that way, with Virgin still struggling to get the arrival slots at Heathrow necessary to operate a service to South Africa. These difficulties aside, the fanfare which accompanied Branson's visit was instructive, testifying to a public hitherto starved of discount airfares.

Ironically, though it was Virgin which created most hype about the prospect of cut-price rates, it has been the existing carriers who have started to deliver the goods. Nothing symbolised this more clearly than the recent announcement by British Airways that it was introducing a return Johannesburg-London fare of R1,992, a price which South African Airways (SAA) soon matched. A year ago bottom of the range prices for the same route were about R3,200. Lufthansa and KLM have also been offering heavily discounted fares to Europe.

These developments are all a function of the liberalisation of South Africa's international aviation policy, announced in April by Dr Piet Welgemoed, Minister of Transport. The main features of the policy, concerning scheduled services, are the deregulation of tariff control, allowing multiple designation of carriers on specific routes, allowing flexibility of provision by designated carriers to match demand and promoting Cape Town and Durban as alternative gateways to the country from Johannesburg. Charter flights will also be encouraged far more than in the past.

The new policy has economic and political roots and reflects developments in the domestic and international aviation markets. The economic impetus arose from the shift in government policy, evident for the past few years, to encourage greater competition in the economy through deregulation and to place the economy on a more market-oriented footing.

This thinking had already been reflected in the deregulation of the domestic aviation industry which took effect in July 1991. This allows for any airline that has suitable aircraft, and is able to maintain and operate them safely, to be allowed to compete with SAA. Also, with SAA now part of a company (Transnet) operating on commercial lines, a clearer distinction was required between the national interest and SAA's interests.

The government has also been persuaded that a liberalisation of international aviation policies will stimulate tourism and trade, and hence economic growth, job creation and the earning of foreign exchange.

The main catalyst for change, however, was politics. So long as South Africa remained the political polecat of the world, with many markets closed to it, the government was obviously going to maintain a highly regulated policy environment which protected SAA's financial viability. All of this changed, however, with the start of political reforms in February 1990 and South Africa's subsequent return to respectability.

A glance at the apron of Jan Smuts airport in Johannesburg confirms this changed status. Since mid-1991, 10 new airlines have started flying to South Africa – new entrants include Cathay Pacific, Singapore Airlines, Qantas and China Airlines – bringing the total to more than 30 with a further 25 applications pending. This represents considerable competition for a fairly small market – less than 1 per cent of the world total – in less than perfect health. The total number of passengers flown by SAA in fiscal 1992 declined to 4.93m from 5.05m the previous year driving SAA into a loss position for the year. The exact figures are not disclosed. SAA made an estimated R60m loss in 1991 after profits of R133m in 1989 and R63m in 1990.

The new entrants into the market have been mirrored by the increased destinations to which SAA is now flying. The most significant developments here have been SAA again getting permission to overfly Africa to Europe, a right withdrawn in 1963; the resumption of flights to New York, banned in 1986; and the reintroduction of flights to Australia, where landing rights were withdrawn in 1987. Other new destinations include Luanda, Cairo, Milan, Singapore and Bangkok.

These developments place SAA in the fairly unusual position, in the international context, of needing to expand its fleet. It has taken delivery of two of the four Boeing 747 400s on order and four of the seven Airbus A320s.

While passengers enjoy the fruits of deregulation in the form of lower airfares, they will soon have to get used to higher airport charges as the country's nine airports and air traffic and navigation services are commercialised into two separate state-owned companies. These services currently cost the state about R200m per year and income does not cover costs.

Europe shrinks from open skies, writes **Michael Donne**

Softly, softly on EC fares

THE European air transport industry faces the era of the Single European Market from next January 1 with doubts as to whether it will produce early and substantial reductions in fares.

The EC Transport Ministers' complex agreement last June on the third phase of deregulation measures effectively covered three major aspects of air transport operations.

On airline licensing, it was agreed that subject to meeting the necessary technical and financial standards, airline operating licences would be granted on the basis of Community criteria, rather than individual national rules as hitherto, making it possible for citizens (or airlines) of one Community country to establish airlines in other Community countries.

On fares and rates, the agreement gave complete pricing freedom to intra-Community cargo and charter air services. For scheduled international passenger services, pricing freedom was approved, subject to governments having the power to disallow any fares regarded as either too high, or too consistently low as to be unfairly "predatory". In the case of disputes, the Commission itself would have an arbitration role.

Probably the most far-reaching aspect of the package, however, was the introduction from next year of "consecutive cabotage", effectively meaning that any Community airline serving a foreign destination will have the right to pick up traffic there and carry it on to a second destination in that country – for example, British Airways flying from London to Frankfurt will be able to pick up traffic in Frankfurt and carry it on to Berlin, and vice-versa.

But the agreement fell short of what many protagonists of total "open skies" had sought. The "consecutive cabotage" was restricted, with traffic picked up at foreign points being limited to only 50 per cent of the overall seasonal capacity on that sector, until April 1, 1997. Full cabotage, or the right of any airline to fly freely inside another EC country, was also delayed until April 1, 1997.

Other restrictions include a ban on foreign carriers flying certain "public service routes" in another country, for example to and from islands.

More controversial is the rule that member-states, under Commission control, may limit foreign-carrier access to their domestic routes for serious congestion or environmental reasons, particularly where other forms of transport, such as high-speed trains, are already deemed to provide satisfactory levels of service.

The overall response to the agreement from the airlines was lukewarm. Some did not like it at all, preferring to maintain the principle of total national sovereignty over their airspace. Others, more eager to see "open skies", felt that while it was a step in the right direction, it did not go far enough. Interpreting the safeguards – for example, determining whether trains provide enough service between two points to justify denying foreign airlines rights to fly the same sector – could lead to some difficult situations.

Moreover, since most of the big Community airlines, such as Air France, Alitalia, British Airways, Iberia, KLM and Lufthansa, already effectively serve most major cities within the Community with direct flights, the "consecutive cabotage" rights now permitted do not seem likely to result in a significant immediate spread of additional services, and thus more competition, on Community air routes, although that may come eventually.

Even unfettered cabotage – the right of a Community airline to fly without restriction between two domestic points in any other EC country – when it does come in

Carriers argue that 77 per cent of international passengers in Europe enjoy low fares and there is little scope for further cuts

1997 seems more likely to be covered by smaller regional airlines, rather than the bigger flag carriers (although the latter may seek to buy existing, or establish new, regional operators).

In what is already a densely-served European air transport arena, faced with the threat of worsening congestion because of air traffic control and ground infrastructure limitations, the scope for an increase in the number of air services is much smaller than many outside the industry may believe possible.

Furthermore, in the light of the airlines' current financial situation – collectively they lost some \$6.7bn on scheduled international operations world-wide over the past two years as a result of the traffic collapse caused by the Gulf War and the recession – they will find it difficult to finance a large number of new routes in the immediate future.

Setting up new routes can be expensive – in terms of personnel, aircraft procurement and marketing costs – a factor that more than one European airline has discovered in recent years resulting in bankruptcy through over-commitment.

The 24-member Association of European Airlines has already expressed its distaste for use of the word "deregulation", regarding it as "wholly inappropriate to describe the stream of packages, plans and proposals on air transport topics emerging from the European Commission" – a number of which it believes have negative implications for the airlines' overall cost structure and traffic base.

The AEA has warned about what it believes could be "over competition", with 163 scheduled airlines and some 65 specialist charter operators already in Europe – more than in the US – and it has pointed out that even on scheduled services many passengers already benefit from discounted fares.

It estimates that some 77 per cent of all international passengers in Europe already benefit from low fares, so that the scope for further cuts is limited.

Moreover, the AEA stresses that while its members are not afraid of competition, in that they already compete across the whole spectrum of their businesses as well as with a dense surface transport system of roads and railways, the European airline industry could well be weakened "by politically sponsored duplication of effort based on the arbitrary assumption that three airlines on a route compete, while two conspire".

But the AEA's real fear is that the European Commission is trying – probably without really realising it – to generate competition with one hand, whilst throttling the airlines' financial ability to compete with the other.

It points out that the Commission is planning to introduce Value Added Tax on intra-Community airline tickets, probably at around 9 or 10 per cent, which could add \$1bn to their costs over a full year.

Mr Giovanni Bisignani, chairman of the AEA and managing director of Alitalia, says that would raise air fares considerably, whilst adding an expensive heavy administrative burden on the airlines.

The proposed abolition of intra-EC duty-free concessions for airlines and airports, now delayed until 1996, is also likely directly to reduce the airlines' own income, whilst adding to their costs if airports pass their own losses of duty-free income on to the airlines.

There are other European airline concerns. It is felt that not enough is really being done to solve the problems of congestion on the ground and in the air.

The airlines are also worried about the Commission's plans for a \$3 a barrel carbon tax, which, especially if it rises as planned to \$10 a barrel by the year 2000, will add further heavy costs to already battered airline balance sheets.

The airlines recognise that the Community is changing the entire scope and structure of intra-European air transport.

They are not afraid of the new era of increased competition, but they feel that instead of approaching it with euphoric notions of much cheaper fares, the European Commission as the policy maker, and the politicians and the public at large, must recognise that the scope for such cuts is limited, and that they will come only slowly, as the airlines themselves recover from the ravages of the recess ion and digest the full long-term implications of so-called "open skies".

Glyn Genin

The strong get stronger: United and American airliners at O'Hare airport, Chicago

Americans grin as carriers groan

Much ado about deregulation

THIS summer, millions of US holidaymakers have clambered aboard their holiday flights. Most have several hundred extra dollars in their pockets, thanks to a ferocious price war which halved domestic fares in the late-spring.

The nation's airlines, by contrast, will be totting up the damage. Most have already posted losses for the second quarter of 1992, and the current three months seems unlikely to yield much recovery. Traffic volumes are guaranteed to be heavy this summer, but the fare war meant that many tickets were sold at uneconomic levels. The sudden surge in traffic, meanwhile, is inflating costs.

This is the sharp end of deregulation. Come November, it will be 14 years since the US Congress decided that any US airline should be allowed to fly any domestic route, and charge whatever it wished. Since then, travellers have become accustomed to "cheap" fares – including time-limited promotional campaigns, such as the latest May/June offer – while US carriers have been forced to pay acute attention to their costs.

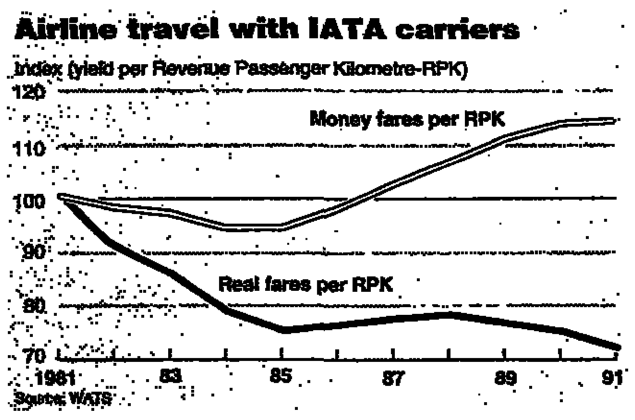
But the deregulated climate has also led to dozens of airline consolidations, with carriers either merging or going out of business altogether. And even the survivors, bowed by an aggregate \$6bn loss during the last couple of years, are cutting back on capital spending for the future.

Now the worry is that deregulation will generate an oligopoly, with the three mega-carriers – American, United, and Delta – inflating prices once their competitors have disappeared. Carriers deny this scenario strongly and it is probably simplistic, at the very least. Nevertheless, given the bloody battlefield which constitutes the US airline industry, it is little wonder that Europe is setting off down the "deregulation" road with a certain wariness.

For the average air traveller, deregulation has been a mixed blessing. Fares are almost certainly cheaper as a result. The US Air Transport Association, for example, notes that since 1978, domestic air fares have risen by 53.4 per cent, while the consumer price index has increased by 108.9 per cent.

But in order to provide services at these prices levels, airlines shied away from traditional point-to-point services, and implemented "hub and spoke" systems instead. This means that a passenger who wants to go from New York to Little Rock, say, will find that he has to waste time flying into Nashville or Memphis. Once he has touched down at the hub city, he will probably have to change planes as well.

Airline travel with IATA carriers



Source: WATS

Clearly, the hub system offers carriers an enormous advantage – permitting them to feed numerous flights in and out of the hub at the same time, so that the aircraft landing in Little Rock carries visitors who began their journeys in totally different cities. But from a passenger's standpoint, "hubbing" means extra travel time and, arguably, greater risk of delays, lost luggage, and so on.

For the airline industry, too, deregulation has been a mixture of pros and cons. The initial impact was much as expected: a wave of new entrants, most of which hoped to capitalise on lower cost structures. Names like Peoples Express, New York Air and Capitol suddenly landed on the nation's tarmacs.

Yet in less than a decade and a half, virtually all of these companies have been eliminated. Peoples Express became part of the Continental Airlines group; Republic merged with Northwest; Midway eventually folded; and so on. America West is one of the few "new airlines" which is hanging on grimly, under Chapter 11 of the Bankruptcy Code.

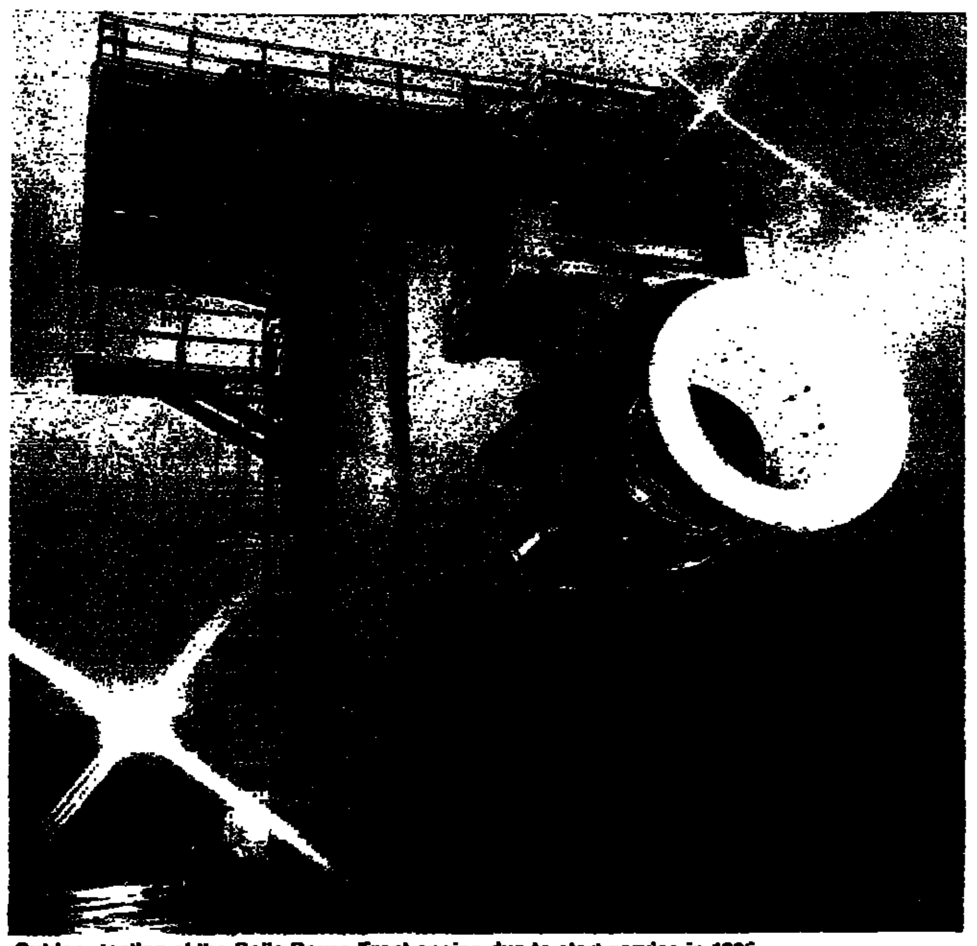
More recently, the consolidation trend has been exacerbated by the sheer level of losses which the industry has been enduring – some inflicted by external events, like the Gulf War – and by the added burden of some onerous debt levels taken on during the 1980s. Three "national" carriers are in bankruptcy: Eastern, Pan Am, Midway and Braniff have all stopped operating in the last two years, and only the three mega-carriers and a couple of smaller "niche" airlines seem sure to survive.

Already, the prospect of an industry dominated by three big players has prompted calls for "re-regulation", has contributed to an ongoing Justice Department investigation into allegations of price-fixing in the industry, and has yielded a class action suit against all national carriers on similar grounds. The last – which could have gone to an unpredictable jury trial with trebled damages because of its anti-trust nature – was settled by the main carriers without admission of guilt this year.

At face value, when bargain fares are so readily available and the industry is losing money hand-over-fist, price-fixing charges would seem difficult to sustain. But as the number of carriers continues to shrink, the allegations seems unlikely to abate.

Nikki Tait

AEROSPACE 8



Outdoor testing of the Rolls Royce Trent engine due to start service in 1995

David Fishlock on the huge efforts needed to create better engines

Loads of time and money

"WE only deal with two things really – materials and air," said Phil Ruffles, Rolls-Royce's director of engineering, in an interview earlier this year. But the cost of research and development to get those two things right for a new aero-engine can be, typically, £500m spread over a decade or more from design concept to full certification.

Up to six years is spent preparing the ground for engine development by the acquisition of the technology – new materials and manufacturing technology – needed to demonstrate the design performance. Engine development takes five years, with the heaviest costs falling in years two to four. Once the go-ahead is given for engine development, the risk must be low. It can be devastatingly costly for the engine-maker if his engine should start to fail in unexpected ways – say, a new material begins to break up.

But by getting his material and air-flow perfectly balanced a designer can achieve minor miracles. For example, he can run a superalloy turbine blade at a temperature 300 degrees C above its melting point for thousands of hours - provided he keeps a film of air flowing across its surface.

Ceramics offer the opportunity to leap hundreds of degrees higher still in temperature. But ceramics differ fundamentally from metals - for example, in the ways they fail. New ways must be learned both to compensate for their weaknesses in tensile strength and to manufacture parts without compromising their good properties, including high specific strength and stiffness. The inducements for the designer include a lighter engine and lower running costs.

The engineer sees two broad ways of harnessing the advantages of ceramics: as monolithics, from which, say, a new turbine blade might be shaped; and as composites, in which the ceramic is buried in an energy-absorbing matrix of polymer or metal.

Composites using polymer matrices are already widely employed by designers of both engines and airframes. No engine designer has yet introduced either monolithics or composites in rotating parts. Rolls-Royce is experimenting with small, uncooled turbine blades of ceramic for helicopter engines.

Looking ahead, this company forecasts that by the year 2010 ceramics will account for 20-30 per cent of engine weight. If ceramics could be applied to the Trent engine for a 300-seat, 4,700 nautical mile range airliner, to push up engine temperature by 500 degC, the life cycle saving to the airline could be £3.5m per engine, says James Angus, Rolls-Royce's manager of design systems and technology.

The airframe designer is also deeply concerned with the interplay between materials and air. Some aircraft designers contend that the last big challenge for aero dynamics, at least in subsonic flight, is better control of the turbulence generated within two or three millimetres of the skin, and a big reduction in drag.

Where turbine blade designers have been blowing air through fine orifices to insulate metal from combustion gases, airframe designers have experimented with sucking the turbulent air through the skin, through fine holes. The first suction system for a big aircraft was demonstrated by Boeing in 1990, as part of a laminar flow research programme funded by NASA and the US Air Force.

Holes only 0.002 inch in diameter were drilled by laser in a titanium panel built into the upper left wing surface of a Boeing 757. The laminar flow

R & D for a new engine can cost £500m over a decade or more - and would be devastatingly more costly if it failed

created by sucking air in through these holes extended across two-thirds of the wing. But NASA estimates that another five years of R&D may be needed before such a system can be sold.

In the mid-1980s when the Ministry of Defence's chief scientific adviser was asked where Britain stood in developing "stealth" materials and techniques to make equipment invisible to enemy sensors, he replied sardonically that the defence chiefs were busy filing the corners from their ships. Smart materials - materials which respond or adapt to their environment the way, say, a chameleon can camouflage itself - are a major R&D target today.

For example, pieso-electric materials embedded in airframes or flight control surfaces could be another way of reducing drag. One idea is to fit the fins of a guided missile with pieso-electric elements which can be made to twist by applying a voltage. A computer might then continuously control their shape in flight. Alternatively, control could be exercised through varying pressures on pieso electric surfaces, fed back as a changing voltage to the flight control computer.

Likewise, to make an aircraft or missile invisible to enemy sensors, there are possibilities emerging for active surface coatings that respond to radiation falling upon them, so as to persuade, say, the radar that it is not there.

David Fishlock is editor of R&D Efficiency

Resistance mounts to bigger airports, writes **Michael Donne**

Heathrow showdown looms

AIRPORT planners throughout the world face mounting difficulties in finding space, and then winning approval, for new airport facilities.

As a result, new airports and associated facilities are taking longer to develop.

For despite the sharp downturn in traffic over the past two years caused by the economic recession and the Gulf War, the resumption of air traffic growth, albeit slow, is bringing a resurgence of congestion on the ground and in the air.

The Association of European Airlines, representing 24 of the major airlines in Western Europe, has pointed out to the European Commission and Governments that "air transport can only contribute effectively to European integration and adequately satisfy user requirements if Community policies ensure that the airline industry can conduct its business in a sound economic environment." This means devoting much more attention and money to the development of a sound and adequate infrastructure in the air through air traffic control and air navigation facilities, and on the ground with adequate terminals and runways..

The International Air Transport Association (IATA) two years ago pointed out that before the mid-1990s, 22 out of 46 existing international airports in Europe would run out of runway capacity, while another 11 airports would face similar problems between 1996 and the year 2000 if no corrective measures were taken.

IATA, which represents more than 200 airlines, pointed out that congestion was already causing losses of some $5bn a year to the air transport and related industries and national economies in Western Europe, a figure that would rise to $10bn a year by the year 2000 if nothing were done.

The real difficulty, however, is that while many European Governments recognise the problem, they lack the cash (and in some cases the courage) to take the necessary steps to deal with it in the face of environmental opposition. Expanding existing facilities can and will help, but such measures often take much time to put in place, and they are frequently only temporary solutions before even they are overtaken by the inexorable growth in demand for air travel.

The International Civil Aviation Organisation (ICAO), estimates that between $250bn and $350bn will be needed between now and the year 2010 to provide the necessary airport infrastructure to cope with anticipated traffic growth, either through expansion of existing facilities or the development of new airport sites.

The ICAO identifies 35 new airports, including Bangkok, Berlin, Chicago, Hong Kong, Jakarta, Kuala Lumpur, Macau, Osaka and Sydney, with 48 new runways planned and almost 150 runway improvements planned or underway, apart from new terminals.

But the airlines argue that even this is not likely to be enough – especially, for example, when set against the $857bn expected to be spent on close to 11,500 new transport aircraft of all kinds by the early years of the next century.

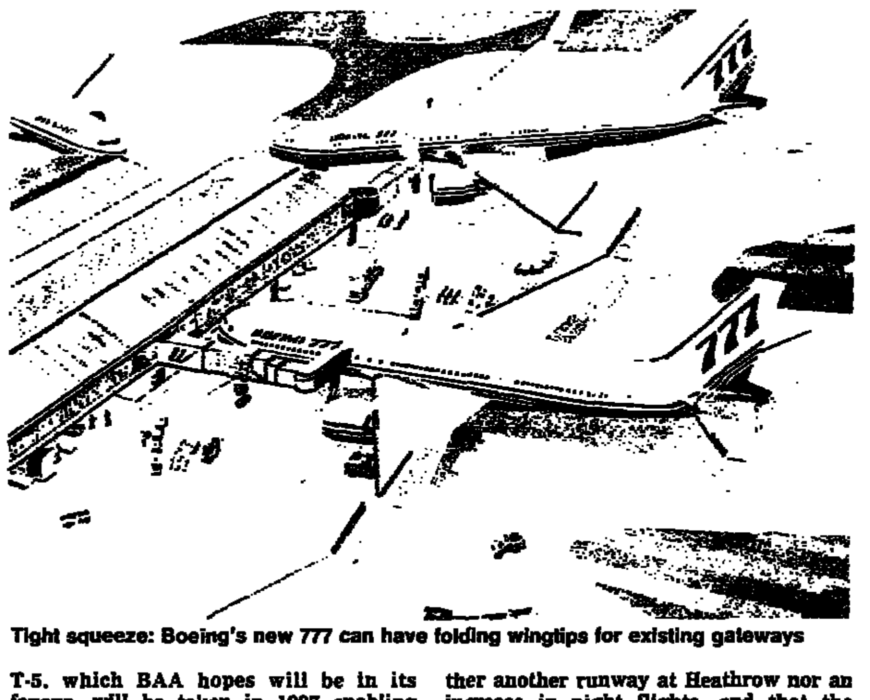
The airlines believe that Governments should be urged to spend more, and to speed the pace of implementation of existing and proposed development plans. This task of persuasion takes much of the time of the ATAG's officers who travel ceaselessly world-wide.

In the UK, the problem of siting new airport developments is likely to come to a head again with plans by the BAA (the airports authority) for a major new terminal at Heathrow, T-5.

The proposal, expected to be submitted in a planning application later this year, is aimed at building on the site of the Perry Oaks sludge works at the Western end of the airport a terminal capable of handling eventually 30m passengers a year, raising Heathrow's capacity to 80m passengers.

The cost will be between £800m and £900m at today's prices, and the terminal will be built in phases, with the first phase opening in 2002 to handle up to 10m passengers a year, with further phases thereafter until phase five is opened in 2016, bringing the terminal to its full 30m passengers a year.

The application is certain to result in a major public inquiry starting some time in 1994. BAA believes the inquiry will conclude in 1995, and that allowing for political delays a Government decision on T-5, which BAA hopes will be in its favour, will be taken in 1997 enabling construction to start.



Tight squeeze: Boeing's new 777 can have folding wingtips for existing gateways

But many others, both in the air transport industry and outside, remain dubious, arguing that such a time-scale may be extended because of the severity of environmental objections.

It is also argued that the bitter fight for the new £400m terminal complex at Stansted, opened early last year, was almost won by the environmental lobbies.

The battle lines for T-5 are thus now being drawn up. BAA is extensively publicising its plans to local residents and others, stressing that it will require neither another runway at Heathrow nor an increase in night flights, and that the local environmental impact will be minimal.

The local residents are not convinced. They point to the likely impact upon the surrounding urban areas of busier roads, especially an enlarged M-25 motorway, and, more significantly, call for the adoption of radical new concepts, such as offshore airports on reclaimed land, instead of adding more terminals to existing airports.

The anti-T-5 lobbies point to the approach employed elsewhere – in Japan at Osaka Bay, in Hong Kong with Chek Lap Kok and Portuguese Macau in China – with offshore airports planned well away from built-up areas.

They believe there is a good site in the Thames Estuary (well away from the original Maplin offshore site which was abandoned in the early 1970s). They argue that, if phase one of the new T-5 is not likely to start operating until 2002, there is still time enough to consider such an offshore site and build it, also in phases, to give the 30m passengers a year that T-5 will eventually handle by 2016.

The cost might well be more than the £800m-£900m estimated for T-5, but immense savings could be achieved far into the next century by having a major airport close to London.

They argue that had Maplin not been cancelled, it would have been in service by 1980, at a cost of about £750m and would have been capable of regular expansion to cope with subsequent traffic growth at costs far lower than the £1bn-plus total already spent on additional terminals at Heathrow, Gatwick and Stansted, even before taking account of the proposed T-5's near-£1bn projected cost.

The environmental lobbies also reject the argument that the new facilities must be at Heathrow so that travellers can benefit from the inter-change traffic that Heathrow already generates.

The UK environmentalists are not alone, for there are many in the world air transport industry who believe that while mainland airports will still have to be built or enlarged, an increasing use of offshore airports offers a solution to the problems of disturbance and increasing pressures on scarce land resources.

The future of T-5 is thus still wide open, but this confrontation between airport and environmentalists is set to become the fiercest yet seen in the UK.

Leasing of aircraft is again becoming a convenient form of finance, writes **Daniel Green**

A money spinner for the intermediaries

AIRCRAFT LEASING is not what it used to be. A combination of falling interest rates, troubled banks and the recession has prompted airlines in the past year to reconsider their enthusiasm for leasing. But now the tide may be turning again in favour of leasing as financiers step up their efforts to secure new business from airlines and investors.

During the late 1980s some of the world's most successful financial organisations were aircraft leasers. At the top of the tree were, and are, Guinness Peat Aviation (GPA), of Shannon, Ireland, and Los Angeles-based International Lease Finance Corporation (ILFC), owned since 1990 by the American insurer AIG.

The business is hugely profitable for these intermediaries: over the past five years, GPA achieved an average profit margin of 15.6 per cent on the aircraft it bought in bulk from manufacturers and sold to investors.

Their airline clients liked leasing because it freed capital for other purposes. By last year, one third of British Airways' entire fleet was owned by investors and run by the airline on operating leases.

The investors, for their part, were able to divert taxable profits into aircraft – mobile and sought after assets – and received an income stream derived from the regular lease payments made by airlines.

This cosy arrangement began to go wrong two years ago. Iraq's invasion of Kuwait frightened passengers away from international air travel and the recession slowed their return to the skies. Airlines struggled, often in vain, to make profits.

Furthermore, one technique used by airlines to cuts costs has been to defer orders, which did little to support the view that aircraft values would be supported by continuously rising demand.

The recession was accompanied by a worldwide fall in asset prices, especially property and shares. This meant that banks' investment portfolios became more skewed away from shares and property and more dependent on other investments such as aircraft. To rebalance their portfolios, investment managers, especially in Japan, staunched the flow of funds into aircraft.

The recession also slowed inflation, which upset the calculations involved in leasing aircraft. The depreciation profile of aircraft in the 1980s suggested a negligible fall in the nominal value of an aircraft over the first five years of its life.

According to Avmark, an aviation consultancy, a 1985 Boeing 737-300 would have cost $22m new and would have been worth the same in 1990. This reduced the risk attached to investing in aircraft and so cut the cost of lease payments. However, the same type delivered new in 1987 is now worth only about $18.5m. Such declines have hit narrow bodied jets such as the Airbus A320 and the Boeing 757 harder than the more popular new wide-bodied aircraft such as the Boeing 747 and McDonnell-Douglas MD-11.

Finally, as world economies slid towards recession, most governments tried to cut interest rates. In the US, the biggest single market for aircraft, interest rates are at their lowest level for almost 30 years. This has pulled airline executives towards simple bank borrowing rather than leases.

AIRCRAFT LEASE RATES 1992

	Year built	Monthly lease ($000)	Annual change %
WIDE BODY			
Boeing 747-400	1989	1125	-2
McDonnell-Douglas MD-11	1990	883	-2
NARROW BODY			
Airbus A320-200	1989	270	-23
Boeing 737-500	1989	230	-8
REGIONAL JETS			
BAe 146-300	1987	225	-10
Fokker F 100	1989	175	-27

Source: Avmark Aviation Economist

"The pendulum has swung away from leasing," says Mr Dan Garton, vice-president of financial planning and analysis at American Airlines. "The alternative of borrowing money on the market through bonds looks more economical. Interest rates have fallen faster than lease rates, especially in the US."

This attitude was dramatically revealed in the failure of GPA's aborted $1bn share sales in June. US investors in particular were unconvinced of the security of airlines' profits and thus their ability to pay lease rates.

Financiers have since put on a brave face on the future of leasing. Citicorp Investment Bank in London raised $522m at about the time of the failed GPA share sale. It used an innovative aircraft securitisation technique to repackage old leases for new investors.

The bank is optimistic that such deals can be repeated. It points to historic growth in airline traffic being double economic growth and growth in aircraft sales should be even faster than that because 30 per cent of new aircraft are to replace old ones, it says.

The bank estimates the total value of aircraft to be sold in the 1990s at $45-50bn, three times the level during the 1980s. It believes that the demand for leasing will continue to come from smaller airlines where the off-balance sheet nature of leasing is particularly attractive.

Some airlines agree there is room for the opportunistic banks now: "Over the next few months, leasing will get easier because both demand has fallen as well as supply," says Garton. Financiers might take heart at this analysis. But there is another airline view that they may also have heard often in recent months. Says Mr Tony Galbraith, the treasurer of British Airways: "leasing is just another way of borrowing. The decision to lease is entirely a matter of cost."

Michael Donne, on this page, weighs prospects for stretched variants of Concorde and the Jumbo

Barriers to a high speed breakthrough

ALTHOUGH there is much interest in the world airline industry in the development of a second-generation supersonic airliner to replace the Concorde, it is unlikely that any such aircraft will emerge before the year 2005, if then.

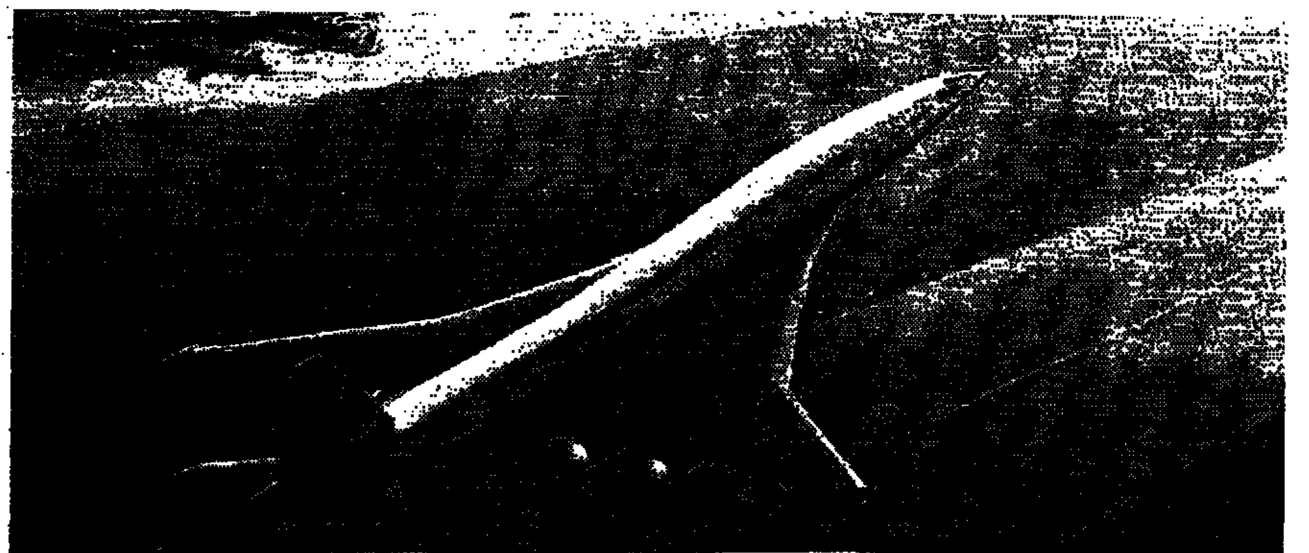
The reasons – environmental, technological and financial – are the "three keys to success" in the aerospace industry.

They are closely related; and without all being fully addressed, no second generation supersonic airliner – called the High-Speed Commercial Transport or HSCT – will ever materialise.

Many long-haul airlines believe that an HSCT will be desirable into the next century – although not necessarily essential – if only because, as a result of traffic growth, there will be many more people flying long distances, especially over the oceans, who will want to reach their destinations quickly.

This will be particularly true for trans-Pacific flights, which already take many hours in even the fastest subsonic jets, such as the Boeing 747-400. It is believed that with an HSCT cruising at a speed of about Mach 2.4 (or about 1,500 mph, faster than Concorde's Mach 2 or about 1,200 mph), with a range of about 5,000 miles, it would be possible to fly between Los Angeles and Tokyo non-stop in about 4.3 hours, instead of today's subsonic 10.3 hours, or between Los Angeles and Sydney in about 7.3 hours, with one stop in Honolulu for refuelling, instead of today's one-stop subsonic journey time of 15.8 hours or 14 hours non-stop. Such an aircraft would carry up to 300 passengers, instead of Concorde's 100, at fare levels broadly comparable to today's subsonic rates.

If such an aircraft could be built at an economic cost the market would probably run to several hundred aircraft.



A Boeing artist's impression of a High Speed Civil Transport which would carry 250-300 passengers at 2.4 times the speed of sound for over 5,000 nautical miles. Boeing and other companies are studying HSCTs' economic and environmental impact

While small in comparison with many subsonic types of jet airliner built over the past 40 years or so, that would still make it exceptionally successful compared with the total of 16 Concordes that entered service with British Airways and Air France (subsequently reduced as some aircraft have been taken out of service for use as "spares pools").

But to achieve that will take considerable time, money and technological expertise, going far beyond the research effort put into the Concorde.

The environmental problems, severe enough for the Concorde, will be far more difficult to overcome with an HSCT, in view of the significant growth of world-wide environmental concerns in recent years.

Noise will be especially critical. The aircraft's engines will need to be much quieter than those of Concorde, because although much of the HSCT's flying will be done at very high altitudes and supersonic speeds over the world's great oceans, especially the Pacific, it will still need to land and take-off at existing airports, some far inland, requiring extensive subsonic flight (to avoid the disturbance of sonic boom) until the oceans are reached. Moreover, in recent years, international aircraft noise regulations have been progressively toughened, and it is unlikely that any relaxation will be made for any new HSCT.

The engines will also have to be much more efficient, so as to save fuel and keep direct operating costs down, while also reducing if not eliminating pollutant emissions, especially nitrous oxides in the upper atmosphere.

This will call for new forms of engine, with improved combustion processes. Much research is already being undertaken in these areas, but so far without a suitable production engine emerging.

The aircraft will also need to make considerable use of high-temperature resistant materials, such as ceramics, especially in the form of new composites, capable of coping with the extremely high temperatures that will be generated both inside the engines and on the skin of the aircraft for the longer periods of sustained and faster supersonic cruise than Concorde is called upon to perform.

Although several companies have produced individual design studies – notably Aérospatiale of France, Boeing of the US and British Aerospace – seen as models on elaborate display stands at international air shows – these are little more than the reflections of designers' dreams and do not mean that an acceptable design is just round the corner.

The major airframe companies in the US (Boeing and McDonnell Douglas), Western Europe (Aérospatiale, British Aerospace and Deutsche Aerospace) and in Japan, and now also Russia in the CIS, have been working on the many aspects of the HSCT for some time, pooling knowledge where they can, in an effort to reach some kind of consensus on precisely what kind of aircraft the market wants, when it is likely to want it and how big that market is likely to be.

The American industry, backed by the long-running and extensive HSCT research programme master-minded by the Government's National Aeronautics and Space Administration, and supported by the vast technological knowledge emanating from its missile and manned space programme, is the most advanced in HSCT studies and is certainly the most confident, the overall attitude being that the basic question is not whether an HSCT will ever emerge, but when.

Concorde entered service in 1976, but because its annual utilisation rate is low compared with subsonic jets (about 1,000 hours a year per aircraft compared with about 5,000 for a Boeing 747-400), and because of its careful maintenance, it will probably be able to continue in service until the early years of the next century.

Many HSCT supporters therefore target the year 2005 as a suitable in-service date for the second-generation aircraft.

They believe that technologically that is an achievable target, given the pace at which aerospace technology has been and is likely to continue accelerating.

But others believe that if a later date, say 2010, is targeted, there is more time for further research, thereby improving the design and enhancing the ultimate environmental, technological and economic acceptability of the aircraft.

The last aspect of that argument is the most important.

Finding the answer to the timing of any HSCT is made more difficult because it will depend not so much on technological progress or environmental acceptability, as on finance.

That, in turn, is where the project ceases to be an industrial matter, and becomes political.

There are several possibilities. If the US aerospace industry can convince its government that an HSCT is worth developing, either as a purely commercial venture or one with both commercial and military uses, it is possible that the US Government may at some time consider subscribing part of the money, with the US industry itself subscribing the rest.

Some other governments

The US, thanks to its missile expertise, leads the world in its work on a High Speed Civilian Transport aircraft

might be happy to see that situation emerge, given the high cost of developing such an aircraft.

No one really knows yet what the cost is likely to be, but estimates have put it at upwards of $15bn for the entirely new airframe and engines that will be needed.

No single company, even in the US, can afford that sort of money – especially with other large subsonic aircraft commitments under way, such as the current studies for a subsonic Ultra-High Capacity Aircraft (UHCA).

The high potential cost would also make it difficult for the aerospace industries of Western Europe and Japan to get their own governments to think in terms of investing in a competitive collaborative HSCT of their own – a kind of "Supersonic Airbus Consortium".

Moreover, a competitive European, or Euro-Japanese, venture would be an expensive option, with no guarantee of success.

For while it would provide the alternative project the airlines would welcome, it would be disastrous financially if the anticipated market proved too small to sustain two ventures.

A more sensible scenario would be for all the other governments to persuade the US to embark upon a single collaborative project on a global basis, with everyone subscribing some part of the cash, picking up some part of the development and production, and getting some part of the market in return.

Experience of getting big international collaborative aerospace ventures off the ground indicates that launching an HSCT in such a way would be tough, involving long and complex negotiations.

But it would not be impossible, and at least a start has been made in the existing internationally collaborative preliminary research programmes and market studies that have been under way at company level for some time.

Given the right kind of encouraging noises from the rest of the world's aerospace industries and their respective governments, the US government itself might be willing to consider such a possibility. Economic facts would appear to indicate that only in that way will any HSCT stand any chance of success.

TOWARDS THE 800-SEAT AIRLINER

Evolution favours mammoths of the air

WITH passenger volumes slowly recovering, airlines are wondering how to cope with a doubling of present traffic levels by early in the next century.

The most obvious answer is to use bigger aircraft. Already, a new generation of medium-to-long range jet airliners seating upwards of about 350 passengers a time is on the way.

But even as they plan to bring these new large aircraft into their fleets around the mid-1990s, the airlines' thoughts are leaping further ahead to the concept of 600-plus seaters for service by the end of this decade.

While initially these notions are focused on long-range aircraft, particularly for trans-Pacific and trans-Atlantic operations, there are many in the airline industry who believe that short-to-medium haul versions, capable of coping with large passenger loads on routes of even a few hundred miles, may well become necessary to ease the congestion problems in US, Western European and Japanese airspace.

As a result, much discussion and analysis is in progress between the airlines and the three major manufacturers, Airbus, Boeing and McDonnell Douglas, on what is being called the Ultra-High Capacity Aircraft, or UHCA. The manufacturers want to know just what the airlines are looking for in terms of range and payload capabilities, while the airlines want to know whether the manufacturers can provide what they want at economic cost in a realistic time-scale – such as around the turn of the century.

Nothing has been settled. The airlines' requirements vary between 500 and 800 seats, with some of the most ambitious ideas stemming from airlines in the US and especially the Far East and South-east Asia, where traffic growth has remained strong even during the recession.

The manufacturers in turn have two main options. They can either develop such monster aircraft by enlarging their existing latest models, such as the Airbus A-330/A-340 and Boeing 747-400 and 777, or they can develop entirely new aircraft.

The economics of both options are finely tuned. Theoretically, derivative models would be cheaper to develop. It would be possible to lengthen the fuselages of the existing large A-330/A-340 and 777 aircraft types, for example, or in the case of the 747-400 extend the existing upper deck all the way to the tail, so as to increase the payload.

But that might not necessarily be the best solution, since entirely new aircraft would be able to take more advantage of the steady improvements in technology, for example in new composite materials and in power-plant technology, which would not only make them environmentally more acceptable at airports, but also perhaps reduce their operating costs.

Every airline has different ideas as to what it wants. The manufacturers' problem is matching these to produce compromise designs that can generate sufficient orders to be successful. This is vital, for the development costs involved in such monster aircraft will amount to several billion dollars for each manufacturer – one estimate has suggested that if all three major airframe builders produced designs, total airframe development costs alone could reach as much as $20bn.

The basic engines for such large aircraft already exist or are under development. Some time ago, the big three engine builders foresaw the need for bigger aircraft, and launched a new generation of very-high thrust engines, starting at around 65,000 lbs thrust and

The cost will be too high for any single airframe or engine manufacturer to bear alone

capable of expansion through derivatives to as much as 100,000 lbs thrust or more – the Rolls-Royce Trent, the General Electric (US) GE-90 and the Pratt & Whitney (United Technologies) PW-4000. Even so, further developments of these will still need cash, perhaps another $5bn or so might, depending upon the thrust-ratings required.

Such sums mean that no single airframe or engine manufacturer could undertake such a venture alone. Each will have to seek risk-sharing partnerships from other manufacturers throughout the world. This is not new – many current commercial airliner projects involve extensive international sub-contracting and risk-sharing partnerships, but because of the great size and cost of any UHCA, the global involvement would have to be much greater. It seems likely, therefore, that virtually every aerospace manufacturer in the world, even some of the smallest, would have some share in the production, if not in the development, of the various UHCAs that may emerge.

The sums involved also indicate that the total purchase price of, say, a 600-seater to an airline will probably amount to somewhere around $200m against today's flyaway cost of a new, complete Boeing 747-400 of around $140m.

At such prices, airlines will want to get the maximum utilisation from such aircraft, which presupposes that they will be used most widely on routes with heavy traffic densities, such as trans-Pacific, trans-Atlantic and on long-haul routes between Western Europe and South-East Asia, the Far East and Australasia. The airlines showing most interest so far – including All-Nippon, American, British Airways, Air France, Japan Air Lines, Lufthansa, Qantas, Singapore Airlines and United – all have such long-distance routes in various parts of the world.

But specially designed short-haul variants could be developed for some of shortest but busiest air routes – London to Paris and other near-Continental cities, Rio de Janeiro-Sao Paulo in South America, and Tokyo-Osaka in Japan, for example. Already in Japan, extensive use is made of a short-haul version of the Boeing 747 that can carry more than 500 passengers. Such variants might need larger, heavy-duty undercarriages because of their more frequent take-offs and landings, and probably more doors for faster loading and unloading so as to reduce turn-round times at airports and enable an increase in flight frequencies every day.

This in turn means that much attention must be paid to airport compatibility. Any new breed of 600-plus seaters will have to fit existing gates and apron stand areas, although waiting areas for passengers within terminals will have to be larger. But as traffic volumes recover from the recession anyway they will create problems for airport operators, especially through the need to improve passenger flow-rates through terminal buildings.

What can the passengers expect from these leviathans of the air? Forget notions of in-flight gymnasia, super-comfort smoking-rooms and crèches for children.

There will be more doors, lavatories and galleys, of course, but the emphasis will be on more seats. It is impossible to say precisely when such giant aircraft will come into service. Most airlines and the manufacturers believe it will be around the year 2000, after allowing for a four-year production period in turn following some two years or so of detailed development. This means that designs will need to be settled and projects formally launched by around 1994, even though by then the airlines will barely be out of their recession and probably not even back into profit.

The next two years, therefore, will be critical in this situation. As Mr. John B. Hayhurst, Boeing's vice-president in charge of Future Large Airplane development, has said: "Anything is possible. It all depends on what the market demands. Our key challenge up front is to identify precisely what is needed. There is a big market out there, and we want to have the right solution."

France fights against falling orders, writes **William Dawkins**

Airbus takes the strain

THE French aircraft industry was given a much needed shot in the arm in July, when United Airlines, one of Boeing's main customers, ordered up to $5bn worth of Airbus A320 airliners.

The sales coup comes as French state-owned Aérospatiale, a 37.9 per cent shareholder in the European Airbus consortium, is struggling with a decline in orders in both civil and defence markets. It needs the breathing space.

Aérospatiale saw its orders fall by 50 per cent last year, worse than the overall 30 per cent decline recorded by the French aerospace industry generally in 1991, according to Gifas, the industry federation. Snecma, the state-controlled engine maker, saw its orders go down by 30 per cent, and Dassault, the maker of fighter jets which has not had a military export order for four years, saw its orders fall by a quarter.

They all know that United Airlines type bonanzas will be very rare, so they cannot depend on a sudden upturn in civil business to bail them out. The same is true of defence markets, where the French military, French aerospace companies' main defence customer, has been told to freeze its budget in real terms for the next three years.

French aerospace companies' response, therefore, has been to step up the search for foreign alliances, to pool their heavy research budgets, exchange costly technology and seek economies of scale.

Reshuffle: Louis Gallois is the new Aérospatiale chairman

In the past year, Aérospatiale led the first real rationalisation of the hard-pressed western helicopter industry through a merger of its helicopter business with Deutsche Aerospace (Dasa) to form Eurocopter. The new group, formed in January and controlled by Aérospatiale, becomes the world's second largest supplier after Sikorski of the US. Mr Jean-François Bigay, its French chairman, believes this is the first step towards cutting the number of leading western helicopter makers from eight to three or four by the end of the decade.

In defence, Dassault recently revealed that it is discussing collaboration on a future generation of fighter aircraft with British Aerospace.

This would come into production in at least 30 years' time. It is separate from the troubled four-nation European Fighter Aircraft (EFA) and France's Rafale, the two new fighter projects in which both companies are separately involved. Sadly for Dassault, the Rafale cannot replace the EFA because it is designed for ground attack, rather than the air to air combat for which the heavier EFA is needed.

France is sticking to the Rafale, on which Dassault's future largely depends, but has been forced by the pressure on its defence budget to delay the first deliveries by two years to 1998.

Seeking strength through co-operation is also behind the plans by Aérospatiale, with Dasa and Alenia of Italy to acquire joint control of Fokker, the Dutch aircraft producer. The trio teamed up last year to form a regional aircraft consortium called Regioliner, controlled by Dasa, resembling a mini-Airbus Industrie.

Airbus has been thinking about making smaller aircraft itself, but has not objected loudly to Regioliner's ambitions because it is putting most of its effort into planning for a giant long-haul carrier for 600 to 1,000 people.

Snecma, the main engine supplier to Dassault and Airbus, is also looking for a foreign partner. It is discussing possible collaboration on future military jet engines with Rolls-Royce of the UK. Currently, Snecma is the only European company to develop a fighter jet engine – the M88 for the Rafale – on its own.

By contrast, Snecma decided long ago not to go it alone in civil engines, where it has for the past 23 years had a successful partnership with General Electric of the US. Their joint subsidiary, CFM International, had a 27 per cent share of the world market at the end of last year.

● France's largely state-controlled aerospace industry has just seen a reshuffle at the top, as part of the three-yearly review of mandates of public sector chairmen.

Mr Henri Martre stepped down at the end of June after nine years as chairman of Aérospatiale, to be replaced by Mr Louis Gallois, who was head of Snecma, the jet engine maker, for the past three years. Mr Martre is due to reach the mandatory retirement age of 65 next year.

Mr Gallois, 48, who has been an Aérospatiale board member for the past two years, was front runner for the job and is expected to continue his predecessor's strategy of seeking international partners.

Mr Gallois' empty chair at Snecma has been filled by 51-year-old Mr Gérard Renon, a former junior defence minister from 1989 to 1991 and technical adviser to President Mitterrand for the two years after Mitterrand came to power in 1981.

Leyla Boulton studies the emergent airlines of the former USSR

Children of Aeroflot lack the freshness of youth

AS RUSSIA and the other former Soviet states try to switch from Communism to capitalism, the air-related industries are going through turbulent times in taking off for a market economy.

Aeroflot, the Soviet carrier which is being broken into separate airlines by the 15 former Soviet republics and other sub-entities, remains the logo on most civil aircraft in the former Soviet Union. Even though the stewardesses will welcome you to different names – say Uzbek Hava Yollaru or Lithuanian Airlines – the service, the aircraft, and the terminals remain depressingly inferior to world standards.

Nonetheless, change is taking place, even if the signs are only visible on the surface. Within Russia, Aeroflot is creating a series of subsidiaries, again with different names – such as Moscow Airlines and Russian International Airlines. The latter has been set up specifically to operate five Airbus A310s which Aeroflot ordered before the Soviet Union collapsed. After financing for the aircraft had to be renegotiated when Russia succeeded the Soviet Union in December, the first of them arrived in Moscow in July.

As for infrastructure, here too progress is being made in small steps. A joint venture with Accor has completed a Novotel at Sheremetievo airport, and the Irish who run duty-free shops at the airport have been training Russian staff in the art of selling duty-free goods in the air.

Brand new airlines, such as ASDA, a project involving a group of Aeroflot pilots, are still scarce on the ground, however. Mr Yuri Mansurov, the chairman of ASDA, says the aim is to begin flights to the US next spring, with the novel idea of flying via the North Pole to cut down on flying time. He does not elaborate on how the project will be financed, except to say that plans to acquire Boeing-747s and 767s are being "resolved".

British Airways is looking for $900m to set up a joint airline called Air Russia

With an eye on the future, British Airways is trying to put together a $900m package to set up a joint airline called Air Russia with the subdivision of Aeroflot which is based at the domestic terminal of Domodedovo.

The other subdivision of Aeroflot which used to handle all international flights, based at Sheremetievo, is talking to Lufthansa, with which it already has a joint venture to modernise the airport, about possibly reviving an airline set up by Russia and Germany in the 1920s.

Just as securing finance is the key question for airline projects, so it is an ever bigger headache for the Soviet Union's aviation industry. Although the West's aircraft makers are pushed to almost giving away aircraft so they can find buyers, Russia is hoping to capitalise on its relatively low costs to team up with western capital and know-how to manufacture aircraft which can compete in both quality and price on world markets.

So far, the industry, starved of investment from its owner, the state, is finding it difficult to even meet internal demand. Aircraft long-promised to Aeroflot, such as the long distance Ilyushin-96, have not materialised on any significant scale. Aeroflot has taken delivery of just one Il-96 so far. And even those state enterprises which have succeeded in finding foreign investors, such as Aviastar, the manufacturer of the Antonov-124 transport machine which wants to switch to mass-production of the TU-204 passenger aircraft, is being hurt by the general crisis afflicting Russian industry. As the government cuts back orders and subsidies in an attempt to restore the country to some financial health, inflation and a physical shortage of banknotes to pay workers are hitting Aviastar like everybody else.

Earlier this year, Aviastar set up a pioneering joint stock company with Robert Fleming, the investment management company taking a 50 per cent stake, to manufacture an upgraded version of the TU-204 for sale on foreign markets or for domestic buyers with hard currency. Plans are still on track to show a prototype fitted with Rolls-Royce engines at this year's Farnborough airshow. The price tag is to established somewhere beneath the cost of a Boeing-757 even though it is not yet clear just how far below that is going to be.

Mr Dick Ciochetti, Rolls Royce's representative in Moscow, says that foreign companies wishing to do business in the former Soviet Union are finding the main problem is that nobody has any money to buy anything. "Not only do they have no currency, they have no roubles now either," he said.

It is on a wing and a prayer that Russia is continuing its turbulent journey to a market economy.

Italians prepare for a shift from military to civilian work, writes **Robert Graham**

A case of too many companies

THE ITALIAN aerospace industry will be dominated by two issues in the coming months: the changing nature of defence needs in Europe, and the reorganisation of domestic defence production.

The former has been highlighted by the plight of the European Fighter Aircraft (EFA) project, in which Italy has a 21 per cent stake.

Not only are jobs at risk in any cut to the project, but there is also a risk of companies ceasing to be involved in state of the art technology – principally Alenia, the aerospace subsidiary of Finmeccanica, the state industrial/financial holding. Irrespective of developments over the EFA, the aerospace industry is set for a much needed process of rationalisation as international competition increases and the emphasis shifts from military to civilian aircraft.

At present, 60 per cent of the industry's annual L7,800bn (£3.6bn) turnover is military; while 35 per cent of the total is accounted for by export orders. Declining order books have forced employment down – the workforce fell by nearly 5,000 to 47,000 last year and is set to contract further. A financial squeeze has held investment back to 1990 levels at L1,300bn, 62 per cent of which goes to research and development.

The industry is also too fragmented, with the private sector dominated by Fiat and the public sector split essentially between the companies belonging to Finmeccanica, in turn part of IRI, the state holding, and those under the wing of Efim, the state industrial holding.

Change is inevitable, at least in the public sector whose current structure has no logic. Furthermore, the new Amato government this month turned IRI into a joint stock company, with a view to privatising part of its holdings. At the same time, the debt-burdened loss-making Efim is set to be wound up, its activities hived off. In the case of aerospace, this would proably go to Finmeccanica.

The first step in this direction was taken in March, when Finmeccanica and Efim agreed to pool their resources in defence avionics and aircraft protection systems. They also agreed to work on a plan of joint industrial development through Efim's stake (via Agusta) in the jet trainer manufacturer, Sai Marchetti, and through Finmeccanica's minority holding in Macchi, which also specialises in jet trainers.

However, these moves have yet to be implemented; and they ignored the financial plight of Efim's main aerospace activity, helicopter manufacture, concentrated in Agusta, which now has to be faced. Agusta produces the A109, which won 5 per cent of the international military and 7 per cent of the civil market for light helicopters in the period 1985-90. It is also a partner with Westland of the UK in the EH 101 anti-submarine and transport helicopter.

Scrapping the EFA may cost jobs and access to the best technology

But the company is weighed down by over L2,000bn of debt, lost L178bn last year and carries a high inventory. It suffers from high production costs and too many production centres(11 dotted round Italy). Plans are in hand for a 20 per cent cut in the 8,150 workforce, but new capital is urgently needed and it also has to find a long-term overseas partner.

As far as the EFA is concerned, Fiat is involved in developing the engine, but its diversified activities make it less vulnerable than Alenia which has the bulk of the 14,000 jobs at risk in the venture. Whatever happens, Alenia is likely to focus more on the civil side of its business, in particular commuter aircraft.

The EC Commission recently ruled against its bid, with French partners Aérospatiale, for de Havilland of Canada, because it would have given their ATR consortium a dominant position in the European 45-66 seater commuter market.

Nevertheless, Alenia has sought to expand its international links, which could now see it joining the new European regional aircraft partnership being set up by Deutsche Aerospace with Fokker of the Netherlands. But its bread-and-butter remains subcontracting work with Boeing and McDonnell Douglas, and latterly with Airbus – a consortium that Alenia would like to participate in directly.

The public sector's structure lacks logic and change is inevitable

Japanese fear they may be frozen out of large new US and European projects, writes **Neil Davies**

Waiting for 'big brother' Boeing

JAPAN'S three leading aircraft producers are going flat out as partners responsible for about 21 per cent of Boeing's 777 programme and in co-developing the F-16-based FSX fighter with General Dynamics.

But the executives at Mitsubishi Heavy Industries, Kawasaki Heavy Industries and Fuji Heavy Industries face big questions:

- what will their research and engineering staffs focus on once these development programmes wind down in 1995-96?
- how will they prepare for future partnerships with Boeing or European aircraft makers?

The answers largely depend on the path Boeing takes. If Boeing seeks to develop a 600-plus seat super jumbojet, the Japanese will probably be pursued as key partners. However, should Boeing and Airbus pool their efforts after deciding athat two separate groups could not profitably build super jumbojets, Japan could be left without a suitor. Because any super jumbo will cost at least $10bn to develop, even Boeing-Airbus collaboration is not impossible.

A "fall back" plan for Japan is the "YSX". The proposed 50-100 seat jet has been discussed for a few years. So too has the so-called "YXX", also known as the 7J7, a proposed 150-seater that Boeing decided not to develop few years ago due to marketing headaches.

While the Boeing-led YXX-7J7 may still be built in some form, Japan's YSX appears to have more momentum, at least in Tokyo. If it is built, actual development will not begin before 1994-95, for an initial flight by 1999 or 2000.

Already Japan Aircraft Development Corp. (JADC) has finished a first-phase feasibility study on the YSX, under funding from the Ministry of International Trade and Industry (MITI), says Hideo Suzuki, deputy director of MITI's aircraft and ordnance division. JADC, which coordinates Japan's partnership with Boeing in the 777, is now conducting a follow-up study that examines detailed aspects of the YSX proposal.

Officials at JADC suggest the aircraft could have relatively high-performance and contain up to about 130 seats. Or it could be a smaller, low-cost aircraft with economical operating costs that would be highly attractive to airlines.

Of the two main possible configurations, the lower-cost model appears more in line with reality. Preliminary discussions with air lines – including Japan Airlines and All Nippon Airways – have forced JADC to focus on the lower-cost version. Its main target markets are Japan, Asia and North America.

Design is not the only variable. The YSX also involves partnership choices. Nobuyuki Fujita, senior YSX manager at JADC, says "one of the fundamental policies of the YSX programme is international collaboration". Japan could either develop the YSX with advanced European or American partners, or with Asian partners such as those from China, Taiwan, Indonesia, Singapore or South Korea.

Perhaps the most pragmatic reason for cooperating with

Japan's fall-back plan, discussed for a number of years, is a proposed 50-100 seat aircraft codenamed 'YSX', on which the Japan Aircraft Development Corp. has made an initial feasibility study

Asian partners would be to keep down the price tag. Building it entirely at home would reflect Japan's astronomical labour costs. Japan could play the quasi-political role of benevolent programme coordinator, under a scheme that would enable Asian nations to sell more value-added aircraft components to Japan. But building the aircraft with Asian partners would result in more difficulties in getting US FAA type certification, Japanese aerospace specialists admit.

They would also prefer to work with experienced European or US aerospace companies as they are not quite confident enough to lead a group of Asian aircraft makers. British Aerospace has already informally approached the Japanese on the idea of developing an aircraft about the same size as the YSX.

As for the engine to power the YSX, studies are under way at Japan Aero Engines Corp. to examine choices. Japan Aero Engines is a consortium that coordinates the nation's work share for International Aero Engines' V2500 jet engine, led by Rolls Royce and Pratt & Whitney.

The Japanese consortium comprises Mitsubishi, Kawasaki and Ishikawajima-Harima Heavy Industries. A de-rated V2500 turbofan engine is one major possibility for the YSX. Additionally, Snecma of France made recent inquires about Japanese participation in a programme to build an engine for a 75-100 seat plane.

What might come after the YSX? It could conceivably later lead to bigger and better Japanese aircraft, supported in part by the Japan Development Bank and other MITI affiliates. However, according to a MITI official, Japan has no intention to develop its own midsized and larger commercial aircraft, because it prefers partnerships with proven leaders.

One thing is certain about the proposed YSX. Japan possesses the capabilities, both technical and financial, to develop it. Still, it would be a challenge to cultivate the required marketing expertise to sell it overseas. It may not be a profitable venture, but the YSX is technically feasible.

Nevertheless, a ghost from the past haunts Japan's aircraft industry.It is the YS-11. Nihon Airplane Manufacturing Co., a special consortium, that produced the 64-seat YS-11 from the early 1960s through 1974.

A total of 182 twin-turboprop YS-11s were made. But the programme lost money. Even MITI calls the YS-11 a failure. However, it did enable Japan's aircraft industry to nurture sufficient know-how to get an invitation as a major supplier for the Boeing 767 twinjet. Dozens of workhorse YS-11s are still flying in Japan, and they will soon need to be replaced. The YSX fits the bill.

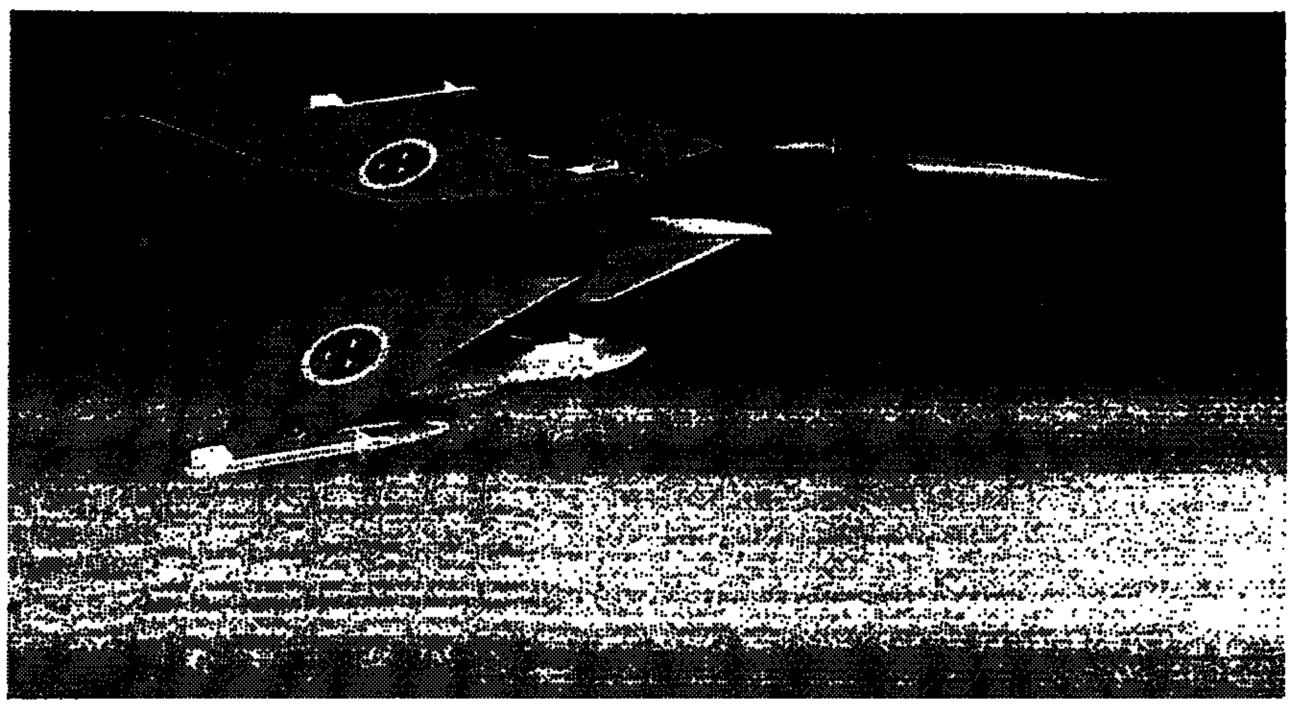
Japanese aircraft specialists realise they cannot just conduct studies on aircraft. Some type of commitment will have to be made soon. This is necessary because the Society of Japanese Aerospace Companies (SJAC) estimates that aircraft production (including repairs) will decline 9.3 per cent to Yen 783bn in fiscal 1992, which started in April 1992.

This projected decline is largely due to falling orders from the Japan Defence Agency, which account for about 75 per cent of the nation's aircraft business.

Beyond the YSX proposal, SJAC is even investigating the idea of a supersonic transport. Much of this work centres on positioning Japan for an invitation to join an American or European supersonic aircraft programme a few years down the runway. Japan is setting its sights high. But those sights are not one notch higher than those of Boeing, its "big brother".

Swedes lose niche in a neutral market, writes **Robert Taylor**

Gripen flies into flak as Finns turn to the US



A photo model of Saab's JAS 39 Gripen, Sweden's light multi-role combat aircraft, equipped for ground attack

THE FUTURE of the military side of Sweden's aerospace industry has become a subject of growing concern. In May, the industry failed to acquire from Finland an expected bulk order for the JAS 39 Gripen multi-purpose fighter aircraft.

The Finnish government's decision to purchase 57 new F18s from the American company McDonnell Douglas instead of the JAS came as a severe shock to Sweden's aircraft makers who had convinced themselves that the Finns were bound to choose their fighter for commercial as well as political reasons.

The importance of the JAS fighter aircraft project from Sweden's peace movement.

However, there remains a clear danger that the aircraft will prove a commercial failure unless it makes a breakthrough into overseas markets. The total cost of the JAS programme to the year 2000 has now reached an estimated SKr63bn, well above its original budget target of SKr24.9bn at 1981 price levels (around SKr54bn). So far, no foreign country has ordered one of the new aircraft.

The Swedish consortium manufacturing JAS – made up of Saab-Scania, Volvo-Flygmotor, Ericsson Motor System

In spite of increased orders for the Swedish airforce, the new jet will be a commercial flop if it is not exported

for Swedish aerospace was underlined only two days after the Finnish deal with McDonnell Douglas when the Swedish government announced it had decided to take out a second order for 110 JAS aircraft for the Swedish air force, with the first deliveries in 1996. The announcement's timing was significant because it signalled to the outside world the firmness of the Swedish state's commitment to the successful completion of the JAS project.

But the government's decision to go ahead came after four years of dither, investigation and argument over whether it made any real sense to continue with JAS in view of the strong opposition to the

and the government-owned FFV Aerotech, part of the Celsius industrial group – hopes to find potential buyers among the countries of central and eastern Europe. This spring, the Hungarian government showed interest.

There is even a belief in Stockholm that the German government might consider acquiring the JAS fighter for its own air force after recently pulling out of the European Fighter Aircraft project. But for all the optimistic talk, nothing has so far materialised in the form of tangible orders.

The JAS is highly regarded by its manufacturers. Its aim is to perform fighter, ground attack and reconnaissance missions. The first of the new generation of light combat aircraft, JAS has a take-off weight of only eight tonnes. It will be able to carry short as well as medium-range air-to-air missiles and the Mauser 27mm cannon.

Requiring minimal base facilities, JAS has a flexible versatility that ought to make it look attractive to air forces in the post-Cold War era. It brings together the best technological advances made by the Swedish defence industry.

But ever since the Swedish government gave the go-ahead as long ago as 1982 the JAS project has been plagued with difficulties.

As a result of technical troubles, particularly with the computer software that controls the aircraft's fly-by-wire flight system, it has fallen two years behind schedule which has added substantially to the development costs and placed a question mark over its ability to generate profits for the consortium.

The original contract for the first 30 units between the consortium and the Swedish state was a fixed cost one – much to the chagrin of the aerospace industry.

The soaring costs had an adverse impact on Saab-Scania's profitability in its aerospace business.

For all its past doubts and complaints, the Swedish government is keen to see the JAS succeed. It is estimated that about 28,000 jobs are dependent on the project and, at a time when registered unemployment is climbing to the 5 per cent mark, any threat to the fighter aircraft would have bleak consequences for the labour market.

Moreover, as the Ministry of Defence admitted in its spring policy document on the future of Sweden's armed forces: "If the JAS project should collapse it would have serious consequences not only for the credibility of our defence policy but also for high technology research and development."

By contrast, Sweden's civil aviation industry looks far more viable with big demand for its products on world markets.

The Saab 340 has been a great success with a dominant position among regional airlines. At the end of last year, the order book backlog for them numbered 92.

The Saab 2000 regional turboprop 50- to 58-seater airliner was unveiled for the first time last December, and made its successful maiden flight on March 26.

Certification of the aircraft is scheduled for the middle of 1993 with first deliveries due by the autumn of that year. The first customer to receive the new aircraft will be Crossair, the Swiss airline. Firm orders now total around 50, while there are options to buy about 150 more. In the US, Express Airlines I (Northwest Airlink) will be the launch customer for the Saab 2000.

This spring Saab-Scania streamlined its aircraft operations into three separate business areas in a move designed to increase efficiency and strengthen competitiveness. But until the JAS 39 Gripen begins to win orders outside Sweden, uncertainty will persist about the shape of the country's aerospace industry.

Europe's fighter is stalled by loss of German support

Four-nation headache

THE European Fighter Aircraft was to have been the centrepiece of this year's Farnborough show, with a flying display. The aircraft will still be a central talking point, although not in the way that was intended.

If development plans had kept to schedule, the first EFA prototype would have made its maiden flight in Germany about six months ago. But the fighter was not destined to become airborne with its original Anglo-German-Italian-Spanish partnership arrangements still intact.

The German government's decision not to proceed in the programme to build the aircraft in its current form beyond the development phase was long anticipated. Less expected was its proposal, sprung on the other partners late in the day, to replace the project with a new, more modest aircraft with French participation.

Bonn's opt-out, based on grounds of cost and changed military requirements, was largely a political calculation – a sacrifice to the new mood of united Germany, reflecting the negative image the project has suffered in that country and the lack of sufficient parliamentary support for it outside Bavaria, the region most industrially involved in the programme.

German industry, with a prime role in the aircraft's fly-by-wire system and responsible for its centre fuselage and fin and rudder assemblies, was as committed as Britain's to the project, with jobs no less at stake. However, German failure to secure leadership of major EFA contracts such as the radar and electronic warfare systems led to its being viewed as a "British" aircraft.

It was inevitable that Germany's decision should raise questions in the UK about the wisdom of the whole project. The UK Ministry of Defence, which had to face a grilling by Mrs Margaret Thatcher on the justifications for EFA back in 1988 when full-scale development was begun, has insisted that there is no alternative – no available aircraft that could provide comparable performance without, at this stage, costing more.

This view has received backing from all three main political parties and the House of Commons defence committee, which came to the conclusion that the project could survive the loss of one or even two partners.

However, German withdrawal creates a quandary for the UK. The amount written into budget plans for acquiring the originally planned 250 aircraft for the RAF and providing spares and support for the first two years of service is around £11.5bn at 1991 prices. Savings can be made in a more narrowly-based project by simplifying manufacturing arrangements, but these are unlikely to compensate fully for the extra share the remaining participants have to take in the cost of setting up production.

Keeping within the budget therefore requires buying fewer aircraft; Italy and Spain, like Germany, had already cut their numbers and the British figure was under review. However, the fewer aircraft produced under the programme, the less cost-effective they become. UK officials have estimated that below a combined level of about 350-400 aircraft, EFA would lose its competitive advantage over its rivals.

The UK, in contrast to Germany, is looking to a global role for the aircraft beyond the requirements of national air defence and is optimistic about export prospects.

Although they are rivals in the export market, the French have an interest in seeing the EFA programme kept alive in order to sustain future European prospects in the combat aircraft sector.

However, the more ambitious proponents of an integrated European industry in competition with US manufacturers have received a major setback with the split in the EFA project. Ideas formulated at Deutsche Aerospace (DASA), the Daimler-Benz subsidiary which includes the airframe company MBB, involved a joint European military aircraft company based around the merged Tornado and EFA management companies.

BAe was already somewhat cool to this corporate approach. After successful collaboration with the US on developments of the Harrier and Hawk, it wanted to keep its US options open as well. It is now all the more likely to be confirmed in that philosophy.

David White

Up in the clouds: an artist's view of the EFA in grey defence camouflage

Germany flexes its muscles

Return of a heavyweight

IN A CORNER of a cavernous assembly shed on the banks of the river Elbe, just downstream from Hamburg, the first prototype of a new Airbus aircraft is being painstakingly rivetted together.

For the 90,000-odd workers in Germany's aerospace industry, the final assembly of the A321 narrow-body Airbus is more than just the production of another aircraft. It is the first large passenger airliner to be produced in Germany – albeit from sections made in France, Britain and Spain as well – since before the Second World War.

"I am very proud that we got the final assembly," says Mr Johannes Müller, Airbus programme director at Deutsche Airbus, 37.9 per cent partner in the four-nation Airbus Industrie consortium. "It has an historic importance for us."

Deutsche Airbus is the most visible sign of the German aerospace industry's emergence as a new force in Europe, alongside the longer-established French and British industries. By the end of September, it will be 100 per cent owned by Deutsche Aerospace (Dasa), the umbrella group brought together by Mr Edzard Reuter of Daimler Benz to co-ordinate and consolidate the industry.

Dasa is an extraordinarily ambitious effort to combine all the big players in the German industry under one roof: Mr Reuter has brought together MBB (Messerschmitt-Bölkow-Blohm) and Dornier, the two principal aircraft manufacturers, with MTU (Motoren und Turbinen Union), the aircraft engine manufacturer, and TST (Telefunken Systemtechnik), in space and communications technology. Welding them into a co-ordinated unit is proving a real challenge , even for Daimler Benz, Germany's

The new group employs 56,500 people out of the 90,000-odd in the industry, and accounts for more than DM12bn sales out of an industry total of DM24bn. Last year it made a profit of just DM50m, thanks to Deutsche Airbus moving into the black.

Nevertheless, Dasa has been flexing its muscles on the international stage in recent months: as the successful purchaser of a majority stake in Fokker, the Dutch regional aircraft manufacturer, and as a potential buyer of British Aerospace's own space division.

Yet the German aerospace industry finds itself caught in a contradictory situation: on the one hand aggressively looking to establish itself as an equal to other international players; and on the other, desperately defending itself against the potential loss of its two most lucrative state-financed contracts, the European Fighter Aircraft (EFA) and the Hermes space shuttle.

If Germany does pull out of those two European collaboration projects, because of the budget cuts ordered in Bonn to pay for the costs of German unification, it will deal a grievous blow both to the standing of the national industry, and to Mr Reuter's whole concept of Dasa as a key new profit centre for Daimler Benz. Yet the prospect is real, and it makes leaders of the industry apoplectic.

"We cannot preach pro-Europeanism, and then pull out of a European project from sheer national egoism," says Mr Karl Dersch, a Dasa director and current president of the BDLI,

In the new Deutsche Aerospace, all the top players will come under a single roof

the German aerospace industry federation, about the decision of the ruling German coalition not to go ahead with EFA production. "It is simply crazy. An ad hoc decision like this will strangle the industry."

He says it is not the big companies, such as Dasa, which would suffer as much as the small: about 110 of the 120 companies in the BDLI are in the small to medium-sized sector. "The cancellation of the EFA could mean bankruptcy for one third of the companies in the industry."

The EFA project is a joint programme with British Aerospace, Italy's Alenia and Spain's Casa. The Hermes space shuttle, in which France is the leading partner and Italy another minority shareholder, is also in doubt because of the budget squeeze in Bonn.

Dasa has produced its proposals for the space programme which still require an extra DM200m to DM300m from Bonn. "Making false economies in the European long-term programme to achieve short-term budgetary relief means throwing away the technological future of Europe in space, and the future of its top engineers on earth," Mr Dersch says.

Having said which, he insists that the German industry is now far less reliant on the public purse than 20 years ago.

Quentin Peel

Dutch to give up Fokker control

A proud name changes hands

FOKKER, the aircraft builder that has put the Netherlands on the world aerospace map, is to be transferred into German hands by the end of 1992, triggering a shakeup of Europe's regional aviation market and substantially redrawing the ownership of the Dutch aerospace industry.

Deutsche Aerospace (Dasa) is expected to acquire 51 per cent of the Dutch company on or around October 1. Majority control will be achieved by buying out part of the Dutch government's 32 per cent stake and subscribing to a Fl 500m issue of new Fokker shares. Final details of the detail, including the price the Dutch state will receive for its Fokker shares, are still being worked out. Dutch unions and parliament must also approve.

Eventually, Dasa will sell a portion of its shares in Fokker to its "Euroliner" consortium partners, Aérospatiale of France and Alenia of Italy, creating a four-way tie-up in the regional segment of Europe's aerospace industry.

The Fokker-Dasa transaction was given the final go-ahead by the Dutch government's decision in late July to sell part of its shareholding to Dasa this year, with the rest to follow in three years.

The sale is a logical consequence of the conditions set in 1987, when the Dutch government bailed out Fokker after it ran into difficulties launching its new Fokker 50 and Fokker 100 aircraft, leaving the state with a 32 per cent shareholding in the company in the process. At the time, the government said that Fokker should seek a strong, international partner to help fund any future generations of aircraft.

Fokker has now found one in Dasa, part of Germany's Daimler industry group and itself the product of a series of mergers and takeovers among Germany's aerospace companies.

Nevertheless, the Dutch government initially baulked at the prospect of Dasa's takeover of Fokker, fearing that high-technology jobs and skills would eventually be transferred to Germany.

In his direct negotiations with the chairmen of Fokker and Dasa, the Dutch economic affairs minister, Mr Koos Andriessen, won some guarantees on future employment and production at Fokker's plants in the Netherlands. But the Dutch government, for its part, was required to pledge to give up its remaining Fokker shares at the end of three years.

With the main outlines of the Fokker takeover now agreed, the biggest remaining uncertainty is the future of the Fokker 50, the company's 50-seater turbo prop.

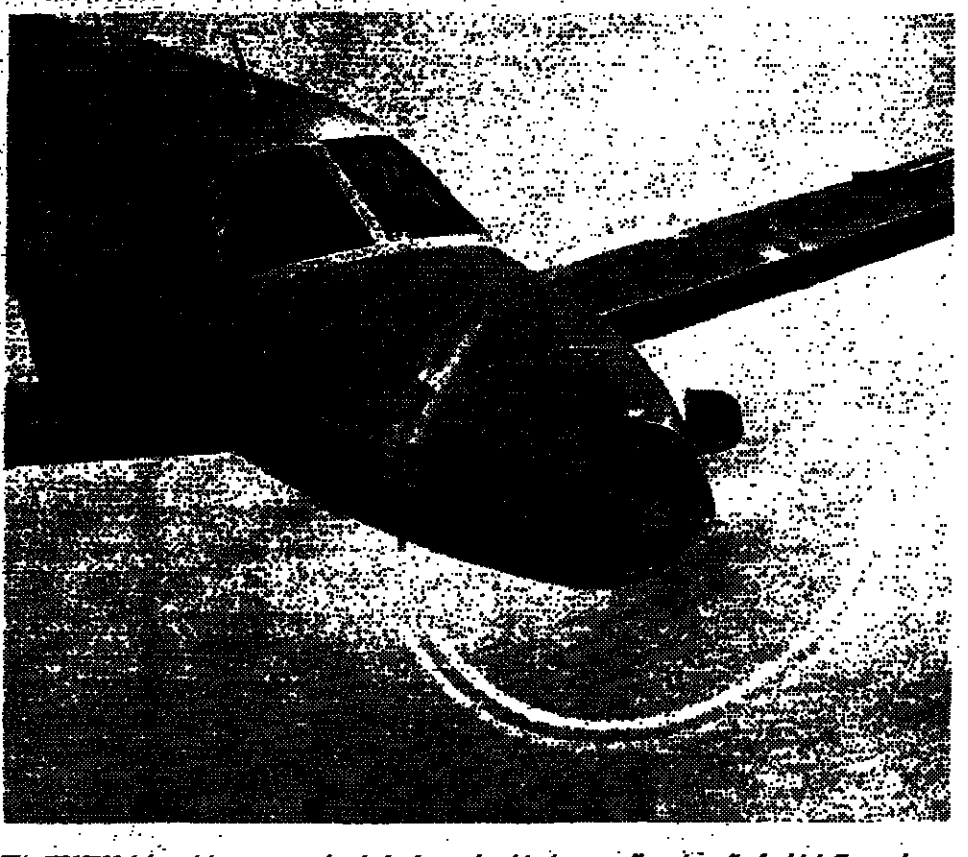
The agreement with the Germans virtually ensures that Fokker will be able to develop its new Fokker 70, based on the existing Fokker 100. And it indicates that the Fokker aircraft will also form the nucleus of a 130-seater machine which will probably be built together with Aérospatiale and Alenia. But the agreement does not cover the Fokker 50, which has been less successful than the 100-seat Fokker 100.

The future of the Fokker 50 is particularly doubtful because Aérospatiale and Alenia have a competing aircraft, the ATR-42, which has managed to crack the North American market, an region where the Dutch machine has yet to achieve a breakthrough. In the past, Fokker has complained that the Franco-Italian jet enjoyed an unfair advantage because of subsidies and grants which Aérospatiale and Alenia receive from the French and German governments. Both companies are now poised to play an influential role in Fokker's future.

Ronald van de Krol

The rising costs of developing business jets are forcing manufacturers to pool their resources. **David Boggis** reports

Consolidation is the key to economy and progress



The TBM700 (above) is a pressurised single-engined turbopropeller aircraft of which France's Aérospatiale hopes to supply 600 to the corporate aircraft market despite the poor trading climate, writes PAUL BETTS. Launched in 1986 by Aérospatiale's Socota subsidiary with Mooney, a small US company, the TBM700 is claimed to embody some of the capabilities and comfort of larger aircraft. Since certification in France and the US two years ago, the French group has invested FFr500m in the project, has delivered 40 aircraft and has orders for 80 more

COSTS ENTAILED in developing a new generation of business jets are reaching the point at which some manufacturers are unable to fund such a project from their own budgets.

Consolidation among manufacturers is the way ahead, many in the industry agree, as companies pool resources in the interests of economy and progress.

In 1990, Bombardier, the Canadian transport conglomerate, acquired Learjet in the US, adding that company's portfolio of smaller, shorter-range business jets to Bombardier's Canadair Challenger, a larger model with intercontinental range and a full-size cabin.

In March this year General Dynamics, the second-largest US defence contractor, sold its Cessna civil aircraft division to Textron, the aerospace and financial services conglomerate. Cessna, formerly best known for its range of single-piston engine trainers and tourers, has in recent years concentrated on turboprop and jet aircraft and has over the past couple of decades developed its Citation range of business jets into a best-selling series of models.

Now British Aerospace is offering much of its Corporate Jets division for sale rather than find from its own pocket the finance needed to develop and build its NBJ – New Business Jet – project, intended as a follow-on to its BAe 125 range of executive aircraft, which has been a steady money-spinner for 30 years.

Mr Ian Woodward, acting director of public affairs for BAe, points to the 125 models' "excellent reputation in the market", but notes: "We are looking at what is needed in the future."

New projects demand new cash. "If we find a joint venture partner, it would be to raise funds. ... The size of the partnership has yet to be determined."

Mr Alan Piper, public relations manager at Corporate Jets, elaborates: "We need investment running up to $1bn to develop a new aircraft."

At present, BAe's 125 production plant at Chester is producing two models: the 125-800, which has transatlantic range, and the 1000, built to cross the US from coast to coast. The original 125 was designed around a cabin with enough headroom for passengers to move about, but on the 1000 the cabin is extended, making more room for seating.

All told, BAe has sold 820 125s of all models, of which, recently, 802 had been delivered. Explaining Bombardier's purchase of Learjet, Mr Bryan Moss, president of the Challenger division of Canadair, says: "Canadair with the Challenger had only one production option – although it was a successful programme. We wanted to be able to offer a family of products."

The smaller Learjets make an elegant fit with the larger Challenger. Bombardier salesmen make the point that for the roughly $27m cost of a Gulfstream IV – the business jet market leader, offering the greatest size and range so far – a company can buy a Challenger *and* a Lear.

The Challenger remains a highly successful product, with

General Dynamics has sold Cessna and BAe hopes to sell its Corporate Jets division

deliveries of the latest model, the 601-3A, from the Montreal plant running at roughly two a month, a rate consistent with that achieved over the past couple of years.

Canadair's present development effort is going into the Global Express, designed as a business jet capable of flying eight passengers and a four-person crew distances of up to 5,650 nautical miles – true trans-Pacific range, enough to fly from Los Angeles to Tokyo or from Tokyo to London. The 48 ft cabin will be the same length as that on Canadair's Regional Jet airliner, also in development. The company expects the Global Express to make its first flight in 1996.

Learjet, which in the first quarter of this year sold nine of the smaller model 31A and two 35As, together worth $18.9m, is test-flying its model 60, a step towards bridging the size and range gap between the 35A and the Challenger. Although slightly smaller, the Lear 60 represents direct competition for the BAe 1000.

Learjet disclaims any interest in buying into BAe. It comments, though: "The cost of developing [a new business jet] runs into millions of dollars. You are going to see consolidation in the future because of the high cost of new development."

Cessna's switch of ownership from General Dynamics to Textron is explained by the company more as a matter of tidying up. Cessna describes itself as "a much more commercially oriented company" than GD, which "is going into military and aerospace manufacturing". Textron, in contrast, has decided "to intensify its commercial business".

Textron owns the Lycoming aero-engine business, which powers several Cessna models, and Bell, the helicopter manufacturer. Cessna also foresees further consolidation in the business jet building industry.

Its own marketing and development effort centres on the five models in the Citation portfolio, the smallest the CitationJet – which will be available from December this year – to the larger and higher-performing model VII. Company philosophy is "to cover every market niche, so that we can start [a customer] at the bottom end of the market and increase in size as their needs grow".

With its Citation X, Cessna is moving into the topmost levels of height, speed and range performance for this size of jet.

In France, Dassault Aviation also disclaims any interest in buying into BAe. Dassault, like BAe, has a long history of building military as well as business jets. Its large tri-jet Falcon 900B is at the top end of the market, competing against the Challenger and the Gulfstream IV, and the Falcon 2000, due to fly next spring, is essentially a shorter, twin-engine variant of the 900B and will provide competition for the BAe 1000.

BAe shrugs off Dassault's disparagement of its models. It is talking to several prospective partners, more than one a non-British concern, and remains confident. "You have only got to look at the [125's] track record," Mr Woodward says. "It is second to none."

Lord Tombs, of Rolls-Royce, talks to **David Fishlock** on the race for new materials

Japan and US widen their lead

A WARNING that British industry is failing to heed overseas competition in an area that underpins much of manufacturing industry comes from one of its leading technologists.

Lord Tombs of Brailes, the outgoing chairman of Rolls-Royce and a Fellow of the Royal Academy of Engineering, believes Japan and the US are pulling ahead with the next generation of engineering materials. These are the materials from which engines and high-duty machinery of every kind will be made in the 21st century.

They will supplant the steels on which engineers have relied for 200 years because of such advantages as temperature and corrosion resistance, low weight and eventually lower cost, Lord Tombs says.

Collectively, they are often known as engineering ceramics. They bear scant relationship, however, to the brittle substances with which the potter works. But like clay they come from some of the most abundant elements on earth, and so are intrinsically very cheap. As with the potter's art, their intrinsic value depends on the skill invested in shaping and forming the engineering ceramics.

The Japanese, for example, have a project to build an entire diesel engine from ceramics, says Lord Tombs. Rolls-Royce is already testing ceramic aero-engine parts made in Japan for possible use in its jet engines. Lord Tombs believes that there is a fundamental difference between the engineering ceramics and today's high-duty engineering materials that could make it very difficult for British companies to retrieve the situation once they have begun to rely on overseas suppliers.

With today's materials, it doesn't much matter where the

Specialised ceramics will supplant the steels which engineers have used for 200 years

engineer buys his bars or sheets of steel. He adds the value in his design office and with his machine tools.

With ceramics the situation is quite different. So intimately are formulation, design and manufacture interwoven, the material supplier will provide finished and certified parts. And initially they will be those parts most crucial to enhancing the performance of engines, by allowing them to run hundreds of degrees hotter.

As Lord Tombs tells it, an eminent British civil engineer first drew his attention to the similarity between the kind of ceramics aero-engine designers covet for such parts as turbine blades, and reinforced concrete.

Strands of steel firmly embedded in the cement enormously strengthen what otherwise would be a very inadequate material. Skilfully reinforced, it is perfectly possible to use concrete to construct a pressure vessel or a ship.

Like reinforced concrete, an engineering ceramic is a composite material. Very strong fibres, whiskers or fabrics of one substance are firmly embedded in another, to impart the metal-like properties such as tensile strength that ceramics normally lack. Performance will depend crucially on the integrity of that bonding and how the bond survives when the going gets hot. Will one substance start to dissolve in the other? Or attack and corrode it?

Three decades of trying to harness these infuriating materials have convinced Rolls-Royce engineers that success can lie only in an integrated approach to development, design and manufacture of a particular part. The material stockist will have no role in marketing engineering ceramics.

A team of ieading UK industrialists with special interests in new engineering materials found recently that Japan already enjoys a lead in the development of ceramic components. "If you want to buy ceramics today, Japan is the place to go," says Lord Tombs. But the US also has a huge national effort co-ordinated by the Pentagon, he says.

By comparison, Britain's effort is miniscule, led, he believes, by Rolls-Royce "still feeling our way along the ceramic route". For the past three years the company has supported a special programme at Warwick University, conducted by its Advanced Ceramic Centre. Here a multi-disciplinary team of a dozen specialists in materials, design and manufacture have been learning the art and science of making aero-engine parts of ceramic.

About a score of other universities, notably Swansea and Birmingham, are involved. "We are probably spending more than anyone else in Britain," says Lord Tombs – around £10m a year, he estimates. Lord Tombs believes the novelty of the technology and the strategic importance to British industry warrants an urgent national effort on engineering ceramics. He wants DTI to back an "enabling club" of major potential users, such as Rolls-Royce, British Aerospace, GEC and other engine makers, "to get people thinking about advanced materials".

What is lacking, he says, is any general awareness of how easily British industry could lose out to overseas rivals. What is needed, he says, is "a central push".

Lord Tombs: imports may become indispensable

Luisetta Mudie views Asia's rising stars

So many willing hands

LAST June, US aircraft manufacturer McDonnell Douglas signed a contract with a Chinese corporation to co-produce 40 commercial jetliners for use by Chinese airlines. This was the largest co-production contract ever signed between China and a US company, and the agreement provides for up to 130 additional jets to be supplied at a future date.

The deal is indicative of a wider trend, which has seen leading aerospace companies flocking east to manufacture parts and assemble aircraft, lured by cheaper labour and the promise of soaring demand for passenger aircraft in the region into the next century.

Analysts say that deals such as the McDonnell Douglas/CATIC link-up will become more and more commonplace, as fledgling Asian aerospace industries demand the transfer of technology and management know-how in return for low-cost manufacturing and access to an increasingly young and educated workforce.

McDonnell Douglas is no stranger to China. Since 1985 the same Chinese company, China National Aero-Technology Import and Export Corporation (CATIC), has delivered 28 MD-80 147-seater passenger jets to Chinese airlines from its plants in Shanghai. China has also landed $125m worth of business making parts for Boeing 757 and 737 jets.

Competition among aerospace giants for joint venture contracts with would-be Asian aircraft manufacturers is stiff, and negotiations are often hampered by such thorny issues as technology transfer and threats to job security back at home. Offset programmes, whereby an agreed amount of offset "credit" accompanies an order for aircraft, entitle the buyer to supply the agreed value in parts to the aircraft company, and are a common form of agreement.

Taiwan has only recently begun to take full advantage of the benefits of offset. Although economically in better shape, it is several years behind most of its neighbours when it comes to attracting lucrative aerospace business. To date there is only a handful of companies currently engaged in production of parts for aircraft. Its

Aviation giants are going east for cheaper labour and soaring demand for aircraft

home grown fighter plane, the IDF, was largely concocted out of US-modified fighter parts.

By contrast, South Korea has aggressively promoted its aerospace industry for more than 15 years, spearheaded by the country's flag-carrier airline, Korean Air. The airline set up its aerospace division in 1976, concentrating at first on manufacture and assembly of aircraft, notably the McDonnell Douglas 500D helicopter for domestic and overseas markets.

Daewoo and Samsung have complemented Korean Air's contracts, with the former producing wing and fuselage parts for a range of Boeing jets and the latter engine components for the US's F-16 fighter jet. This last is part of an offset agreement linked to last year's purchase by the South Korean government of $5bn of F-16s from the US.

Taiwan has the technological capability to supply aircraft manufacturers with a range of parts, but a lack of co-ordination among the island's myriad small specialist companies has limited the progress of the aerospace industry. A lack of sophistication in handling aerospace deals has, according to Taiwan Aerospace president Mr Denny Ko, also been a handicap in negotiating a proposal to acquire a $2bn stake in the commercial aircraft business of McDonnell Douglas.

Both the government and the private sector in Taiwan were put off by the ill-health of the Douglas Aircraft commercial sector finances. Taiwan Aerospace's proposal to postpone a direct equity investment and link loans to orders for the MD-12 has left the two sides facing each other over a stalemate.

However, "there are plenty more fish in the sea," says Mr Ko. Since the deal appeared to founder, both Boeing and British Aerospace have visited Taiwan, both to discuss offset programmes. Boeing recently awarded its first contract to a Taiwan supplier, and is to set up a quality training and testing laboratory on the island, in conjunction with the Taiwan government.

Boeing forecasts that China alone will need $25bn to $35bn of new jetliners between now and the year 2010. The expanding Asian market will inevitably attract increasing attention globally as the region continues to experience economic growth. The aerospace industry will form a significant part of that growth.